

Draft Comment Analysis Report

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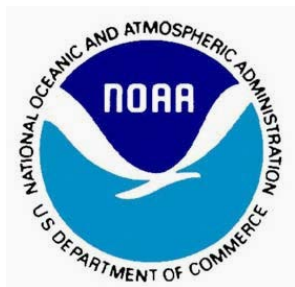
Steller Sea Lion Protection Measures for Groundfish Fisheries in the Bering Sea and Aleutian Islands Management Area

Draft Environmental Impact Statement/Regulatory Impact Review/Initial Regulatory Flexibility Analysis



**United States Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service, Alaska Region**

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Introduction

The western distinct population segment (WDPS) of Steller sea lions is listed as endangered under the Endangered Species Act (ESA) and has critical habitat designated to protect haulout, rookery, and foraging locations throughout Alaska waters. The ESA requires the National Oceanic and Atmospheric Administration (NOAA) to insure that the groundfish fisheries that it manages are not likely to jeopardize the continued existence of the WDPS of Steller sea lions or adversely modify or destroy its designated critical habitat.

In 2010, the National Marine Fisheries Service (NMFS) released a biological opinion (FMP biop) on the Alaska groundfish fisheries (NMFS 2010a) and developed management alternatives and an environmental assessment to analyze the impacts of the alternatives under the National Environmental Policy Act (NEPA) (NMFS 2010b). The 2010 FMP biop determined NMFS could not insure that the Alaska groundfish fisheries located in the Western and Central sub-regions of the Aleutian Islands were not likely to jeopardize the WDPS of Steller sea lions or to adversely modify their designated critical habitat, and that changes to the Pacific cod and Atka mackerel fisheries in the Aleutian Islands were necessary to avoid the likelihood of jeopardy for the WDPS of Steller sea lions and their designated critical habitat. The 2010 FMP biop included a reasonable and prudent alternative (RPA) to mitigate the effects of the groundfish fisheries on the WDPS of Steller sea lions and their critical habitat that is specific to the Atka mackerel and Pacific cod fisheries in Areas 543, 542, and 541 of the Aleutian Islands. In December 2010, NMFS published an interim final rule that implemented the RPA in the 2010 FMP biop (75 FR 77535, December 13, 2010, corrected 75 FR 81921, December 29, 2010), effective January 1, 2011.

In a lawsuit filed against NMFS in the U.S. District Court for the District of Alaska in December 2010, on the 2010 FMP biop and the interim final rule implemented by NMFS (*State of Alaska, et al. v. Lubchenco, et al.*, U.S. District Court (Alaska) Nos 3:10-cv-00271; 3:11-cv-00001; and 3:11-cv-00004), the Court found that NMFS properly applied the ESA and the Administrative Procedure Act in the development of the biological opinion and in the implementation of the interim final rule. The Court also found that the agency's NEPA process for preparing the environmental assessment for the interim final rule did not provide the public with sufficient opportunity for review and comment and that the conclusions of the environmental assessment were highly controversial and uncertain. Based on these findings, the court ordered NMFS to prepare an Environmental Impact Statement (EIS) for the action, which must be completed by March 2, 2014. The district court decision was appealed by the plaintiffs and upheld by the U.S. Court of Appeals for the Ninth Circuit in July 2013.

NMFS started the public process for the EIS by publishing a notice of intent to prepare an EIS in the *Federal Register* on April 17, 2012 (77 FR 22750). The scoping period for the EIS was approximately 6 months with the period ending October 15, 2012, as required by the March 5, 2012, Order of the U.S. District Court for the District of Alaska to NMFS.

Due to differences in opinion on the interpretation of scientific information and on the application of law in fisheries management, the State of Alaska and the State of Washington sponsored a review of the 2010 FMP biop. NMFS also sponsored a review of the 2010 FMP biop by the Center for Independent Experts. NMFS considered the information and analysis in these reviews in the development of this EIS. Through the Steller Sea Lion Mitigation Committee (SSLMC), the North Pacific Fishery Management Council (Council) worked with NMFS and the public to develop recommended alternatives for analysis in the EIS and to provide guidance to the agency on contents of the EIS. These meetings were open to the public, and public comment was provided for during each meeting.

To inform the Council and the public of the results of scoping and to assist in the development of the range of alternatives and analysis for the EIS, in November 2012, NMFS provided the Council with a scoping report that summarized the issues associated with the proposed action and described alternative protection measures raised in public comments during the scoping process. In December 2012, the Council recommended alternatives for NMFS to consider in the development of the reasonable range of alternatives for analysis in the EIS. In April 2013, the Council and its Scientific and Statistical Committee (SSC) reviewed the preliminary draft EIS and identified a preliminary preferred alternative for the public review of the draft EIS. In May 2013, NMFS issued the Steller Sea Lion Protection Measures for Groundfish Fisheries in the Bering Sea and Aleutian Islands Management Area Draft Environmental Impact Statement/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (DEIS). The 60-day public comment period on the DEIS ended on July 16, 2013. For more detail on the history of the DEIS see Chapter 1 of the DEIS. A history of recent, relevant consultations and actions leading up to the DEIS is presented in the 2010 FMP biop.

NMFS has two major statutory responsibilities related to the action analyzed in the DEIS. The first is to manage the groundfish fisheries of Alaska in accordance with the Magnuson-Stevens Fishery Conservation and Management Act. The second is to protect listed species, such as the endangered Steller sea lion, and insure that the agency's actions are not likely to jeopardize the species' continued existence or adversely modify or destroy designated critical habitat such as haulouts, rookeries, and foraging locations.

The DEIS assesses the environmental, social, and economic effects associated with alternative Steller sea lion protection measures. According to the 2010 FMP biop, the protection measures currently insure that jeopardy is not likely. However, it may be possible to revise the management measures to still insure that jeopardy is not likely and reduce economic costs to the fishing industry. The proposed action would revise Steller sea lion protection measures for the Aleutian Islands Atka mackerel, Pacific cod, and pollock fisheries to ensure that the requirements of the ESA are met while minimizing economic impacts on the fisheries, to the extent practicable.

The EIS is intended to serve as the central decision-making document for the Council to recommend and for NMFS to consider Steller sea lion protection measures. The selection of an action alternative as the final preferred alternative would amend regulations at 50 CFR part 679 to implement the revised Steller sea lion protection measures.

The Role of Public Comment

NEPA is a procedural law intended to facilitate better government decisions concerning the management of our lands and oceans. The law has an environmental emphasis. Drafters of the law believed that by requiring a process designed to provide decision-makers with the best information available about a proposed action and its various alternatives, fewer adverse impacts would occur. NEPA does not dictate protection of the environment, but instead assumes that common sense and good judgment, based on a thorough analysis of impacts of various alternatives, will result in the development of the Nation's resources in a way that minimizes adverse impacts to our environment. This is achieved by requiring an open public process whereby the responsible government agency, combined with the stakeholders associated with a particular natural resource and development project, pull together and present relevant information for use in making decisions.

This draft Comment Analysis Report (CAR) provides summaries of the public comments received during the comment period and presents the agency's draft responses. This CAR provides the summary of the comments and draft responses to the decision-makers prior to the publication of the Final EIS. This CAR also is a tool to be used by the EIS authors to revise the EIS and respond to each statement of concern.

Changes to the EIS from draft to final as a result of public comment are noted in this report.

What is the Response to Public Comments?

NEPA requires government agencies to include in a Final EIS all the comments received on the DEIS. The Final EIS must include responses to the comments, and must describe any changes made to the DEIS as a result of those comments.

According to the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR 1503.4), an agency preparing a final EIS shall assess and consider comments both individually and collectively and shall respond by one or more of the means listed below, stating its response in the final statement. Possible responses include the following:

1. Modify alternatives including the proposed action.
2. Develop and evaluate alternatives not previously given serious consideration by the agency.
3. Supplement, improve, or modify its analysis.
4. Make factual corrections.
5. Explain why the comments do not warrant further agency response, citing the sources, authorities, or reasons which support the agency's position and, if appropriate, indicate those circumstances which would trigger agency reappraisal or further response.

NMFS staff has undertaken a careful and deliberate approach to ensure that all substantive public comments are reviewed, considered, and responded to. This draft CAR also serves as an intermediate document that will inform NMFS, the Council, and the public of the issues that need to be addressed in the final EIS. The final CAR will become Chapter 12 in the final EIS.

Analysis of Public Comments

The analysis of public comment on the DEIS was a multi-stage process that included reviewing and summarizing the comments within each submission, preparing responses, and reviewing the responses. The process is explained in detail below.

NMFS received 13 submissions of comment. The NMFS Alaska Region staff compiled all incoming submissions of comment, maintaining a comprehensive list of all public comments. Staff assigned each submission a unique submission identification. The 13 submissions of comment, including any attachments, are accessible by a link through the Alaska Region website at <http://alaskafisheries.noaa.gov/sustainablefisheries/sslpm/eis/default.htm> under the section titled "Notice of Availability." The submissions of comment and their attachments also are available directly at www.regulations.gov using the docket number NOAA-NMFS-2012-0013 in the search bar.

Each submission was reviewed by the preparers. The preparers divided each submission by its individual comments, each of which was assigned a comment ID number. The goal was to capture each sentence and paragraph in a comment letter containing substantive content pertinent to the DEIS. Substantive content included assertions, suggested alternatives or actions, data, background information, or clarifications relating to the DEIS document or its preparation. The substantive comments were

summarized and organized by issue area. Within the 13 submissions received by NMFS, the preparers identified 227 specific substantive, summarized comments. The preparers then wrote the response for each summarized comment.

The comment summaries and draft responses are presented in this report by DEIS chapter and then by subject area. During the process of identifying statements of concern, all comments were treated equally. The emphasis is on the content of the comments. They were not weighted by organizational affiliation or other status of commenters. No effort has been made to tabulate the number of people for or against a specific aspect of the DEIS. In the interests of producing a Final EIS that both meets the mission of NMFS and best serves all stakeholders, all comments will be considered equally on their merits.

Quality Control and Review

All comments and responses were reviewed by the preparers and NOAA General Counsel-Alaska Section. Additionally, various procedures were established in the analysis process to prevent a submission or comment from being inadvertently omitted. Communication and cross-checking between the submissions and the comments have ensured that all submissions received during the comment period are included in the report. As a draft CAR, this process of quality control and review is ongoing through the development of the Final EIS.

Overview of the Alternatives

Chapter 2 of the DEIS describes in detail the five alternatives for the proposed action to implement Steller sea lion protection measures for the Aleutian Islands groundfish fisheries. Each alternative represents a suite of management measures for the Aleutian Islands fisheries that attempts to mitigate the fisheries' potential impacts on Steller sea lions in a way that reduces the potential economic burden to fishery participants, to the extent practicable.

Alternative 1: Status quo, 2011 Steller Sea Lion Protection Measures (Interim Final Rule)

Alternative 2: Modified 2011 Steller Sea Lion Protection Measures

Alternative 3: Further Modified 2011 Steller Sea Lion Protection Measures

Alternative 4: Modified 2010 Steller Sea Lion Protection Measures

Alternative 5: Preliminary Preferred Alternative

The alternatives are identified in order from more fishery restrictions and area closures (Alternative 1) to the least amount of fishery restrictions and closures (Alternative 4). Alternative 5 is the preliminary preferred alternative and contains primarily components of Alternatives 3 and 4, resulting in restrictions that are similar to Alternatives 3 or 4, depending on the fishery. Management measures under each of the alternatives are summarized below; see Chapter 2 of the DEIS for more detail.

Alternative 1: Status Quo Status quo, 2011 Steller Sea Lion Protection Measures (Interim Final Rule)

Alternative 1 is the no action alternative that is required by NEPA. If NMFS took no action, then these protection measures would remain in place. Alternative 1 is the current management of the Aleutian Islands groundfish fisheries under the protection measures implemented by interim final rule (75 FR 77535, December 13, 2010), including the RPA in the 2010 FMP biop, and the current management measures for the pollock fishery. Current management measures for Pacific cod and Atka mackerel under previous fishery management plan amendments also apply (e.g., Amendments 80 and 85). The interim final rule implemented management measures for the Atka mackerel and Pacific cod fisheries in 2011. The Aleutian Islands pollock fishery is currently managed under the 2003 Steller sea lion protection measures (68 FR 204, January 2, 2003) and Amendment 82 (70 FR 9856, March 1, 2005). The major components of Alternative 1 include no retention of Atka mackerel or Pacific cod in Area 543, very limited fishing for Atka mackerel and Pacific cod in critical habitat in Areas 542 and 541, and no directed fishing for pollock in critical habitat throughout the Aleutian Islands.

Alternative 2: Modified 2011 Steller Sea Lion Protection Measures

Alternative 2 was developed by the Council's Steller Sea Lion Mitigation Committee with modifications by the Council. The provisions of the Council's motion were included in Alternative 2 as much as possible. Alternative 2 was designed to mitigate the fishery impacts on Steller sea lions in a way that allows more fishing compared to Alternative 1. The major components of Alternative 2 would allow directed fishing for Atka mackerel and Pacific cod in Area 543, including inside critical habitat; close all of Area 543 to directed fishing for pollock; and allow more portions of critical habitat in Areas 542 and 541 to be available for directed fishing for Atka mackerel, Pacific cod, and pollock compared to Alternative 1. Protective options for the Pacific cod and pollock fishery have been added that would further mitigate the potential impacts of these fisheries on Steller sea lions and their critical habitat.

Alternative 3: Further Modified 2011 Steller Sea Lion Protection Measures

Alternative 3 is designed to allow more extensive relief to fishing fleets and communities in the Aleutian Islands than Alternative 2. The Council's Steller Sea Lion Mitigation Committee recommended the provisions in this alternative based on the Committee's view that recent scientific information and review of information available prior to the development of the 2010 FMP biop indicates that the management actions enacted by the interim final rule are substantially over-restrictive. Alternative 3 was designed to mitigate the fisheries' impacts on Steller sea lions in a way that provides additional opportunities for harvest of Atka mackerel, Pacific cod, and pollock in statistical Areas 543, 542, and 541 compared to Alternatives 1 and 2. Alternative 3 would allow additional fishing inside critical habitat in each area with less catch limits for the Atka mackerel and Pacific cod fisheries compared to Alternative 2.

Alternative 4: Modified 2010 Steller Sea Lion Protection Measures

Alternative 4 would implement the majority of Steller sea lion protection measures in place during 2010, with two major exceptions. Note that Alternative 4 is basically the no action alternative from the 2010 Environmental Assessment that was prepared for the interim final rule that implemented the 2011 Steller sea lion protection measures. The protection measures in Alternative 4 evolved from the 2001 biological opinion on the Alaska groundfish fisheries (NMFS 2001a). The first major exception is that the Harvest Limit Area management of Atka mackerel fishing inside critical habitat and the accompanying prohibition on Pacific cod trawling would not be included in Alternative 4. The second major exception would be to allow pollock fishing inside critical habitat, as described under Alternative 3. The return to 2010 protection measures, with these exceptions, allows Alternative 4 to provide the greatest relief from fishery management restrictions while mitigating potential fishery impacts on Steller sea lions and their critical habitat. This alternative is consistent with the Council's recommended third alternative in their December 2012 motion.

Alternative 5: Preliminary Preferred Alternative

In April 2013, the Council recommended a preliminary preferred alternative (PPA) for the public's consideration during the review and comment period on the DEIS. NMFS considers the Council's recommendation for the preferred alternative and identifies the proposed action to be analyzed in an ESA Section 7 consultation. The Council considered recommendations from its Steller Sea Lion Mitigation Committee, Scientific and Statistical Committee (SSC), and Advisory Panel and from public testimony in developing its recommended PPA for the DEIS. The PPA is built from management measures for the fisheries analyzed under Alternatives 3 and 4 and includes area catch limits for the pollock fishery. The PPA includes the 3-nm no-groundfish-fishing closure at Kanaga Island/Ship Rock rookery and the vessel monitoring system requirements as described under Alternatives 1 through 4 in the DEIS for the same reasons stated under Alternative 1.

Response to Comments

Chapter 1 Comments

These comments are on Chapter 1; the purpose and need, Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) national standards, NEPA issues, ESA issues, and general EIS issues. Most of the comments on Chapter 1 questioned NMFS's compliance with the Magnuson-Stevens Act, ESA, and NEPA in the implementation of the Steller sea lion protection measures and in the development of the draft EIS.

NEPA Compliance

CH1-1 Comment: This purpose and need statement appropriately recognizes the ESA's directive to insure that actions authorized by NMFS are not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat of such species. However, NMFS impermissibly qualifies this obligation with a single statement about minimizing costs, where practicable, which was apparently selected from among the Magnuson-Stevens Act's 10 National Standards. This qualification both impermissibly elevates economic concerns and ignores the agency's other statutory obligations.

Response: The purpose and need in the DEIS is clear in that the agency needs to meet its obligations under the ESA and at the same time needs to minimize economic impacts, to the extent practicable, on those affected by the restrictions under the Steller sea lion protection measures. NMFS must meet both of the needs to avoid jeopardy under the ESA and minimize costs, where practicable, when managing fisheries under the Magnuson-Stevens Act.

CH1-2 Comment: An agency must look hard at the factors relevant to the definition of purpose, and should always consider the views of Congress expressed in the agency's statutory authorization to act, the relevant regulatory framework, and other congressional directives. The DEIS violates this statutory obligation by (1) adopting an unreasonably narrow statement of purpose and need that is inconsistent with the statutory objectives of the proposed action, and (2) failing to consider feasible measures that would provide additional protections for endangered sea lions and the marine ecosystem. The purpose and need statement does not comply with NEPA because it impermissibly elevates economic considerations and does not comport with the objectives of the ESA and Magnuson-Stevens Act. The goals to protect Steller sea lions and minimize economic costs may not be considered as coextensive, and the agency must meet all its management obligations under the Magnuson-Stevens Act and ESA when formulating and selecting NEPA alternatives. The purpose and need statement abandons the statutory directives for protection of marine resources, for avoiding irreversible and long-term adverse effects on the marine environment, and for rebuilding, restoring, or maintaining marine environment; and does not address any of the other Magnuson-Stevens Act national standards; nor the need to obtain optimum yield taking into account the protection of the marine ecosystem.

Response: All Federal actions must comply with all applicable Federal law. This does not mean that every proposed action must have as its purpose and need the full suite of applicable Federal law. NMFS has taken a hard look at the factors relevant to the proposed action in the definition of the purpose and need and has worked with the Council and the public during scoping to define the proposed action, and develop the purpose and need and reasonable range of alternatives. The statement of purpose and need is directly tailored to the proposed action. As explained in the DEIS, the need to comply with section 7(a)

of the ESA is the primary driver for implementing Steller sea lion protection measures. However, in meeting ESA requirements, NMFS also needs to make sure that the measures that it implements minimize, to the extent practicable, adverse economic impacts to the groundfish fisheries. The range of alternatives is reasonable to meet the purpose and need statement. Because Alternative 1 would most likely provide sufficient protections to endangered Steller sea lions based on the 2010 FMP biop, a more protective alternative than the interim final rule was considered and not further analyzed, as explained in Section 2.3.4 of the DEIS. An agency may focus the scope of the action analyzed to ensure the range of alternatives and the analysis of the effects of the alternatives provide the decision makers with concise information for a selection of an alternative that will accomplish the purpose and need. NMFS considers and addresses its obligations under the Magnuson-Stevens Act in the analysis of the alternatives' effects on the human environment.

CH1-3 Comment: The range of alternatives evaluated in the DEIS may not be all of the possible reasonable alternatives. The Council and the public cannot compile the universe of reasonable alternatives when performance standards by which NMFS will determine unacceptable impacts are not disclosed and apparently still shifting. NMFS's process to identify and develop reasonable alternatives is incorrectly described in the DEIS at Section 1.6. Revise Section 1.6 to reflect that NMFS asked for assistance from the Council through its SSLMC to develop alternatives for the EIS, and that the SSLMC developed management measures without the benefit of requested fisheries interaction information or performance measures that would be used in an ESA consultation to understand how NMFS would evaluate the potential impacts of the proposed measures.

Response: Section 1.6 accurately describes the public process NMFS used to develop the DEIS, including the range of alternatives. NMFS started the EIS process with a formal scoping period. In recognition of the Council's integral role in developing alternatives for fishery management actions under the Magnuson-Stevens Act, NMFS took many additional steps to seek input from the Council and the public before releasing the DEIS. NMFS produced a scoping report that summarized the issues and alternatives from the formal scoping process. NMFS provided the SSLMC the performance standards used in the 2010 FMP biop, as modified based on the reviews of the 2010 FMP biop, for consideration while developing alternative fisheries management measures for the Council's consideration. These are the same performance standards used in the DEIS analysis of the alternatives, as explained in Section 1.10.3.

CH1-4 Comment: By having the protection measures under the interim final rule as the status quo (Alternative 1), the analysis in the DEIS is skewed and improper, does not provide the public and the decision makers with an objective evaluation of the impacts of the interim final rule, and facilitates the agency's evasion of the central and most controversial issues related to the potential interactions between commercial fisheries and Steller sea lions.

The DEIS should assess the 2010 FMP biop RPA and interim final rule as the proposed action, and determine how moving forward with this action would impact the human and natural environment. The DEIS must then consider the effects of, and alternatives to, that action to meet its NEPA mandate. The no-action alternative considered must be the 2010 environmental assessment (EA)-described "no action" alternative, which made no changes to pre-existing 2003 groundfish fisheries management regulations, as these were the last regulations that were enacted with proper NEPA compliance.

Response: This comment focuses on terminology without explaining how changing the terms would improve the analysis. The DEIS rigorously explores and objectively evaluates each alternative in the same manner. This provides equal treatment to the analysis of all alternatives so that the public and decision makers have similar information for each alternative to ensure a fair comparison.

Alternative 1 is the protection measures as implemented by the interim final rule. NMFS labeled this alternative the “no action” alternative because it would remain in place if the agency took no action. In other words, if the agency were to take no action at the end of the NEPA process, the interim final rule would continue to be the management measures used for the Aleutian Islands Atka mackerel and Pacific cod fisheries. The DEIS provides an objective evaluation of the impacts of Alternative 1 relative to the environmental baseline (see Section 1.10.1) and the other alternatives. This analysis shows how moving forward with Alternative 1 would impact the human and natural environment. The Council is scheduled to recommend a preferred alternative for NMFS’s consideration in October 2013. NMFS has not had the opportunity to consider the Council’s recommendation of a preferred alternative so it would be premature to label Alternative 1 the proposed action at this stage.

Alternative 4 is the Steller sea lion protection measures that were in place in 2010, essentially the 2010 EA’s “no action” alternative. The DEIS provides an objective evaluation of the impacts of Alternative 4 relative to the environmental baseline (see Section 1.10.1) and the other alternatives, including Alternative 1. NMFS did not label Alternative 4 the “no action” alternative because, in order to implement this alternative, NMFS would need to take action. Calling Alternative 4 the “no action” alternative would not change the analysis of Alternative 4.

CH1-5 Comment: NMFS violates NEPA by using the DEIS analysis to justify a predetermined conclusion. NMFS bases its analysis on the assumption that only Alternative 1 is protective, despite the fact that NMFS has never done sufficient NEPA analysis to validate this conclusion. The DEIS does not comply with the mandate for EISs to “serve as a means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made” (40 CFR 1502.2(g)). The DEIS needs to have a fair and balanced approach to the analysis of the alternatives.

Response: The DEIS does not justify a predetermined conclusion. As explained in Chapter 2, all five alternatives were designed to accomplish the purpose and need for the action. The DEIS analysis does not conclude that only Alternative 1 is sufficiently protective, and NMFS has not identified Alternative 1 as the preferred alternative. Based on the Council’s recommendation, the DEIS identified Alternative 5 as the preliminary preferred alternative. NMFS does assume that fisheries have the potential to impact Steller sea lions and that assumption is supported by the 2010 FMP biop, as explained in Chapter 5. The DEIS also explains the uncertainties and controversies involved with understanding whether and how fisheries impact Steller sea lions, and notes that NMFS is continuing to evaluate the effects of fisheries on Steller sea lions in light of external reviews of the 2010 FMP biop and other new information. Because NMFS assumes that fisheries have the potential to impact Steller sea lions, the DEIS analyzes these potential impacts in detail to provide the information necessary for decision-making. However, that does not mean that Alternative 1 will be chosen as the preferred alternative. That decision has not yet been made. The process for determining the preferred alternative is ongoing and will be informed by the DEIS analysis, public comments on the DEIS, NMFS’s responses to public comments, and the Council’s recommendations, as well as new information available up to the time the Secretary of Commerce makes a determination on the proposed action.

CH1-6 Comment: NMFS has not responded to comments by the public regarding the key scientific issues at the heart of the NEPA impacts analysis. Although the commenters provided lengthy scoping comments for the EIS, NMFS has incorrectly characterized many comments as related only to the 2010 FMP biop and did not respond to them in its scoping report. NMFS has similarly failed to adequately respond to repeated requests for more information by the Council. Most significantly, NMFS did not substantially revise the preliminary draft EIS before publishing the DEIS, even though the Council passed a motion at its April 2013 meeting asking for substantial revisions. NMFS has had numerous occasions to respond to critiques, correct scientific flaws, and provide a meaningful role for the public, the Council, and its own scientific advisors since March 2012 when the court issued its order, but has repeatedly done

just the opposite by conflating its roles as the action and consulting agency under the ESA, and hiding behind a future ESA consultation.

Although NMFS has solicited public comment on Steller sea lion mitigation measures in other processes, it has not provided specific written public responses to comments other than general statements that it “considered” such comments. For example, NMFS never published specific responses to public comments on the 2010 FMP biop. Similarly NMFS has yet to respond to public comments on the 2010 interim final rule—Alternative 1 in the DEIS—even though the public comment period closed on February 28, 2011. See 76 FR 2027 (January 12, 2011). Specific written responses by NMFS to these previous comments would have informed this NEPA process and public comment during it.

Response: NMFS has followed the public process for developing the EIS as required by regulations and by the U.S. District Court for the District of Alaska. NMFS produced a scoping report that contained all of the public scoping comments received and NMFS’s response to relevant scoping comments. Relevant scoping comments were then addressed through development and analysis in the DEIS. Relevant scoping comments guided the scope of issues analyzed in the DEIS. NMFS did make substantial changes based on the Scientific and Statistical Committee’s and Council’s comments on the preliminary draft EIS.

NMFS provided a 60-day comment period on the DEIS. NMFS considered, summarized, and responded to comments received on the DEIS. The response to the comments on the draft EIS are contained in this draft CAR, which will be included in the final EIS. Relevant public comments guided revisions from the DEIS to the final EIS, as explained in the response to comments.

NMFS is not required to provide response to comments on issues not relevant to the development of the EIS and the process required by NEPA. NMFS has clearly explained the scope of the EIS analysis and the issues relevant to understanding the alternatives and their impacts on the human environment.

NMFS has not provided responses to comments that are not related to the EIS analysis to keep the EIS and NMFS’s responses focused on the relevant considerations and key controversial issues. NMFS has provided responses in all circumstances that it is required to provide responses by law, including comments to this DEIS.

CH1-7 Comment: The DEIS does not disclose and respond to all major points of view on the environmental impacts of the alternatives as required by 40 CFR 1502.9(a). The final EIS should include an analysis of the potential impacts of fishing on sea lions, their prey, and critical habitat, and incorporate NMFS’s responses to the findings and recommendations of the reviews of the 2010 FMP biop into this analysis, and apply that across all alternatives. This information must be included in order for the EIS to meet NEPA requirements to take a hard look at the environmental effects of each alternative. Without these analyses, the EIS will not be based on the best scientific information, nor will the resulting decisions that depend upon the EIS. The DEIS should have presented NMFS’s response to those who contend that the measures in Alternative 4 provided adequate mitigation from any potential impacts from fishing.

Response: Whether an agency has taken a “hard look” at the environmental effects of the alternatives is determined by a “rule of reason” test applied by the reviewing court. The reviewing court looks to see if the EIS contains a “reasonably thorough discussion of the significant aspects of probable environmental consequences.” *Neighbors of Cuddy Mountain v. U.S. Forrest Serv.*, 137 F.3d 1372, 1376 (9th CIR 1998). Then the reviewing court looks to determine whether the agency took a “hard look” at those consequences. *Id.* The DEIS takes a hard look at the probable environmental consequences of the alternatives. The analysis in the EIS is based on the best scientific information available. Environmental consequences are discussed and analyzed in Chapters 3 through 7. Examples include the Chapter 5 analysis of the potential impacts of fishing on sea lions, their prey, and critical habitat.

NMFS has considered the reviews of the 2010 FMP biop in the development of the DEIS as explained in Chapters 1 and 5. Section 1.9.6 provides a brief summary of the reviews of the 2010 FMP biop to inform the reader that these were documents that informed the analysis in the DEIS. NMFS considered the reviews of the 2010 FMP biop to identify issues that were applicable to the NEPA analysis and included that information in the DEIS. In Section 5.2.2.1.9, NMFS discusses the conclusions of the reviewers of the 2010 FMP biop relative to the analysis of the effects of the alternatives on Steller sea lions and how NMFS used these reviews to inform the DEIS analysis. NMFS does not plan to expand the discussion in the final EIS of the findings of the 2010 FMP biop and the comments and critiques nor does NMFS plan to include responses to the specific comments provided in the reviews of the 2010 FMP biop or responses to the public comments on the 2010 FMP biop in the final EIS.

All of the alternatives were designed to minimize potential fishery impacts on Steller sea lions and each alternative greatly restricts fishing compared to no protection measures. The alternatives were designed to accomplish the stated purpose and need for the action. In developing the range of alternatives, NMFS, the Council, and the Council's SSLMC considered all available information, including the reviews of the 2010 FMP biop. Based on that information, the alternatives provide varied levels of protection to Steller sea lions. The Council has yet to recommend a preferred alternative; and NMFS has yet to conclude its consultation, so it is premature to conclude which alternative best needs meets the purpose and need for the action.

The DEIS evaluates the effects of Alternative 4 along with the effects of all of the other alternatives, and notes that Alternative 4 would be less protection to Steller sea lions than the other alternatives.

CH1-8 Comment: The DEIS does not give a concise, clear, and to the point statement of NMFS's thinking and resolution of the reasonably foreseeable significant adverse impacts expected from interaction between commercial fisheries and Steller sea lions. The DEIS repeats the exact failing noted by the U.S. District Court for the District of Alaska and the very reason that the agency has been ordered to prepare this EIS. The court found that NMFS essentially provided some underlying environmental information for comment in the 2010 EA, but not its conclusions. Although it consists of hundreds of more pages than the 2010 EA, the same is true of the DEIS.

Response: The DEIS presents NMFS's conclusions on the reasonably foreseeable significant impacts at Section 5.2, including interactions between commercial fisheries and Steller sea lions that are expected from each alternative based on the analysis and information in Chapter 5.

CH1-9 Comment: The DEIS sheds no meaningful light on the indicators that NMFS will use to assess impacts or the performance standards for mitigating potential adverse impacts. In Chapter 5, the comparison of alternatives is almost exclusively a comparison of how much geographic area is open or closed to fishing combined with an assumption that more open areas and more fishing means more adverse impacts on Steller sea lions. This simplistic analysis does not provide the reader with any meaningful basis upon which to evaluate and choose between the alternatives. NMFS should have definitive conclusions about the respective effects of the different alternatives on the WDPS of Steller sea lions and provide a transparent description of the methods and analyses used to evaluate the impacts across alternatives and present a clear summary of the results of its impact analysis showing, with detail, how each alternative may or may not have different impacts on the WDPS of Steller sea lions.

Response: Chapter 5 provides a clear explanation of the methods used for the analysis of the potential effects of the fisheries on Steller sea lions. The analysis examines the effects of the alternatives on incidental takes (Section 5.2.1), harvest of prey species (Section 5.2.2), and disturbance (Section 5.2.3). As explained in Chapter 5, the DEIS uses the best scientific information available to understand the potential fisheries effects under each alternative. The DEIS provides conclusions for each effect based on

the results of the analysis. The assumptions that are used in the analysis are clearly stated for the public's understanding of the nature of the available information and how this information is used in the analysis.

CH1-10 Comment: The DEIS fails to evaluate well-recognized and significant scientific issues, lacks key information to support decision making, and deviates from fundamental NEPA principles and requirements. Given the importance and magnitude of these deficiencies, NMFS must prepare a revised DEIS that addresses the issues raised by the commenters and then issue the revised DEIS (or the revised sections thereof) for public review and comment, as required by 40 CFR 1502.9(a). The comment period should be for 30 days and could be completed before the October 2013 Council meeting.

Response: NMFS has followed NEPA procedures to produce a draft EIS that uses the best scientific information available to analyze the alternatives. This analysis provides the decision makers with the ability to compare and contrast the effects of the alternatives on the human environment. New information, previous analyses (including the 2010 FMP biop), and the reviews of those analyses are identified and discussed in Chapter 5. NMFS disagrees that a new DEIS is necessary for public review at this time because there is no substantial new information available to inform the analysis contained in the DEIS. NMFS will evaluate any future new information to determine if it is necessary to supplement the DEIS analysis. In response to public comments, NMFS has identified specific revisions that are necessary for the final EIS, as discussed in responses to specific public comments.

CH1-11 Comment: The DEIS is yet another encyclopedic compilation of details related to the WDPS of Steller sea lions; but unfortunately, its analyses need substantial revisions in order to meet both NEPA's requirements and its goal of fostering excellent agency actions. The DEIS does not provide straightforward and concise reviews that are proportional to potential impacts and effectively convey the relevant considerations on the key controversial issues to the public and decision makers in a timely manner while rigorously addressing the issues presented, as directed by the March 6, 2012, Memorandum from Nancy H. Sutley to Heads of Federal Departments and Agencies, Improving the Process for Preparing Efficient and Timely Environmental Reviews under the National Policy Act at 40 CFR 1500.1.

Response: The DEIS does effectively convey the relevant considerations on key controversial issues. The Executive Summary provides a discussion of the area of controversy and Table ES-18 directs the reader to where the areas of controversy and uncertainty are further discussed in the analysis. In developing the EIS, NMFS carefully considered the public comments received during scoping on the issues that should be addressed in the EIS and provided information that would inform the EIS analysis and any future ESA consultation that may occur on the proposed action. NMFS balanced meeting the requests of the public to address many issues identified during scoping with focusing the analysis and supporting information on the key issues that allows one to understand the potential impacts of the alternatives on the human environment. Additionally, NMFS used the methods suggested in Council for Environmental Quality (CEQ) guidelines to avoid an encyclopedic analysis. In the DEIS, NMFS incorporated by reference information and analysis from related documents described in Section 1.9, including the Alaska Groundfish Programmatic Supplemental EIS (NMFS 2004a), Alaska Groundfish Harvest Specifications EIS (NMFS 2007), Essential Fish Habitat Identification and Conservation EIS (NMFS 2005), the 2008 Revised Recovery Plan for Steller sea lions (NMFS 2008), the 2010 FMP biop (NMFS 2010a), the reviews of the 2010 FMP biop ((Stokes 2012), (Bowen 2012), and (Stewart 2012)), and the Aleutian Islands Fishery Ecosystem Plan (NPFMC 2007). Another important document referenced in Chapter 3 was the Stock Assessment and Fishery Evaluation Report for the Bering Sea and Aleutian Islands Groundfish Fisheries. Referencing these documents allows for a more concise description of the status of the environment and a focused analysis of the effects of the alternatives on the human environment.

CH1-12 Comment: In the DEIS, NMFS recognizes that the 2010 FMP biop is controversial and reflects differences in opinion on the interpretation of scientific information and on the application of law in fisheries management. However, these general statements do not accurately describe the precise controversy at issue. The relevant controversy specifically involves a difference of opinion as to (1) whether the Bering Sea and Aleutian Islands (BSAI) groundfish fisheries have any effects on the WDPS of Steller sea lions including nutritional stress, and, if so, (2) the scope, duration, and magnitude of any such effects.

Response: The Executive Summary provides a general overview of the controversial issues related to the proposed action. Included in this discussion is Table ES-18 that identifies the sections in the DEIS where each controversial issue is further explored. The controversial issues include potential fisheries effects on Steller sea lions and additional issues, as listed in the table. The causes for controversy for these issues are differences in opinion on the interpretation of available scientific information and on the application of law in fisheries management.

CH1-13 Comment: NMFS's impact analysis must be carefully tailored to the specific controversy at issue, including those identified in the reviews of the 2010 FMP biop. NMFS may not simply assume that the fisheries impact Steller sea lions—it must first analyze whether such fishery impacts exist at all.

Response: NMFS disclosed the areas of controversy in the Executive Summary, including issues identified in the reviews of the 2010 FMP biop that are related to the EIS analysis. This discussion included Table ES-18 identifying specific issues and where they are discussed in the draft EIS. The majority of the controversial issues are addressed in Chapter 5, in Sections 5.1.1 and 5.2.2. Each issue is discussed in the DEIS to provide the reader an understanding of the differing views on the issue and the use of this information in understanding the status of Steller sea lions and in the analysis of potential effects. NMFS does not simply assume that fisheries impact endangered Steller sea lions. As explained in Chapter 5, NMFS identified fisheries as having the potential to impact Steller sea lions based on the best available information (including but not limited to the 2010 FMP biop) that indicates that fisheries may adversely affect Steller sea lions by the harvest of prey species, by incidental takes, and by disturbance.

CH1-14 Comment: NMFS has not adequately addressed incomplete or unavailable information as required by Section 1502.22 of the CEQ regulations. The single statement in the Executive Summary related to 40 CFR 1502.22 does not comply with this requirement. NMFS must make clear that such information is lacking. NMFS must obtain and include information relevant to reasonably foreseeable significant adverse impacts in the EIS if the information is (1) essential to a reasoned choice among alternatives and (2) the overall cost of obtaining the information is not exorbitant. Reissue the DEIS for public review and comment with this information; otherwise, the public will be deprived of the opportunity to provide specific and thoughtful comments on the required Section 1502.22 analysis.

Response: The Executive Summary provides a summary of the issues addressed in further detail in the DEIS. In the Executive Summary, under Areas of Controversy, NMFS summarizes the types of information lacking to further understand the potential effects of the fisheries on Steller sea lions and to further understand Steller sea lion biology and refers the reader to Chapter 5 for a more complete discussion. Each chapter analyzing the potential effects of the alternatives on the human environment provides the best scientific information available regarding the environmental component and applies that information to the analysis of the effects. Each chapter provides the information necessary to comply with 40 CFR 1502.22. For instance, Chapter 5 includes the existing credible scientific evidence that is relevant to evaluating the reasonably foreseeable significant adverse impacts on Steller sea lions in Section 5.1.1 for the status of Steller sea lions and in Section 5.2.2 for the analysis of the effects of the alternatives on Steller sea lion prey availability. Section 5.2.2.1.9 includes a list of issues identified in the

2010 FMP biop where information is lacking to further understand the impact of fisheries on Steller sea lions. While this missing information would provide a better understanding of potential fisheries effects, the methods used to analyze the effects were not dependent on this missing information. Chapter 5 explains the methods used to analyze the effects of the alternatives on Steller sea lion prey availability, which was developed by a team of experts in stock assessments, Steller sea lion biology, and fisheries management from the Alaska Fisheries Science Center, National Marine Mammal Laboratory, Council, and NMFS Alaska Region Protected Resources Division and Sustainable Fisheries Division. The team examined the best scientific information available on fisheries harvests and Steller sea lion biology to determine how to analyze the effects of the alternatives in a way that would allow for the comparison of effects among alternatives. NMFS does not plan to supplement the DEIS, at this time, in response to the issues raised in the comment.

CH1-15 Comment: NMFS must finalize its NEPA process with a Record of Decision.

Response: NMFS acknowledges the comment.

ESA and NEPA Compliance

CH1-16 Comment: NMFS is improperly deferring public presentation of its conclusions on the key issue of whether there are negative impacts on Steller sea lions to a forthcoming consultation under the ESA. NMFS's stated plan is to perform a new Section 7 consultation after the EIS is finalized. Repeating this sequential approach, which is contrary to Federal policy and regulations calling for concurrent processes, effectively eliminates meaningful public comment on the agency's conclusions and makes it impossible for the Council to make an informed decision on new mitigation measures. The analyses NMFS will incorporate in a future biological opinion must also be included in the DEIS to ensure consistency and guard against using one standard in the EIS for evaluating alternatives and their effect on Steller sea lions and to pick a preferred alternative, versus using a different standard in a future biological opinion to evaluate the same alternative and its effects. This is necessary to better inform the public in order to solicit meaningful comment and for informed decision making. NEPA demands that agencies provide the public and decision makers with the results of an agency's hard look at the most significant issues related to the impacts of a proposed action *in advance* of a decision on a proposed action, and we urge NMFS to correct this fundamental defect.

Response: An agency prepares an EIS to disclose the potential impacts of a proposed action and to compare and contrast the impacts of each alternative. The DEIS presents the agency's conclusions on the impacts of the alternatives on the human environment, including Steller sea lions. The DEIS contains the information necessary for the Council to make an informed recommendation on a preferred alternative and for the public to provide meaningful comment.

As explained in Section 1.5.1 of the DEIS, a new ESA Section 7 consultation may be required to implement any of the alternatives. Reinitiation of Section 7 formal consultation is required if (1) the amount or extent of the incidental take is exceeded, (2) new information reveals that the agency action may affect listed species or critical habitat in a manner or to an extent not considered in the 2010 FMP biop, (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in a previous consultation (the 2010 FMP biop) (NMFS 2010a), or (4) a new species is listed or critical habitat is designated that may be affected by the action (NMFS 2010a). NMFS Sustainable Fisheries Division worked closely with NMFS Protected Resources Division and the Alaska Fisheries Science Center to analyze the impacts of the alternatives and to incorporate the best scientific information available necessary to understand and explain how fisheries impact Steller sea lions and the changes in impacts under the different alternatives. All of this information is presented in Chapter 5.

CH1-17 Comment: NEPA does not permit the action agency to defer analysis of undeniably significant impacts to later assessments to be performed by another agency division under the ESA, an entirely different statutory framework. NEPA requires NMFS to perform a full and fair analysis, in the first instance, of all relevant information—including all issues raised in the reviews of the 2010 FMP biop.

Response: NMFS prepared the DEIS following the NEPA process. NEPA requires the evaluation of the potential effects of the alternatives on the human environment using the best scientific information available. The DEIS does not defer to a later document for an analysis of significant impacts. The DEIS includes the issues relevant to the analysis of the effects of the alternatives on the human environment identified during scoping, including issues identified by the reviews of the 2010 FMP biop. Chapter 5 includes the evaluation of the effects of the alternatives on Steller sea lion incidental takes, disturbance, and potential effects on prey based on the best available information.

CH1-18 Comment: NMFS does not need to make a jeopardy and adverse modification determination under Section 7 of the ESA in a NEPA document. NMFS must disclose its thinking as to what are or are not the reasonably foreseeable significant impacts of commercial fishing on Steller sea lions, whether those impacts are beneficial or adverse, which alternatives are expected to adequately mitigate any adverse impacts, and how the agency arrived at those conclusions.

Response: NMFS agrees.

CH1-19 Comment: Given that NMFS is consulting with itself to execute the ESA, there is a particular need for conscientious attention to the statutes procedural rules. Strict adherence to the procedural mandates of the ESA is the best way to ensure that, should the current NEPA process ultimately result in adoption of different Steller sea lion protection measures, NMFS's subsequent ESA analysis will comply with the agency's obligation to prevent jeopardy and adverse modification and make decisions based on sound science.

Response: NMFS agrees that the process described in regulations (50 CFR 402, Subpart B) and in agency guidance for ESA consultations on Federal actions needs to be followed, and NMFS will continue to do so for this and all other actions under the agency's authority.

CH1-20 Comment: One overarching problem with the current EIS process is that NMFS has been conflating the distinct statutory obligations under NEPA and the ESA. Such an approach is unhelpful and unlawfully blurs the careful distinction between "action agency" and "expert agency" required by the ESA. NMFS appears to be improperly combining the court-ordered NEPA analysis and an ESA analysis. The Council has pushed for a premature ESA analysis of the NEPA alternatives before the alternatives are even finalized, and NMFS has complied by supplying early feedback from the agency's Protected Resources Division. Combining the agency's NEPA and ESA efforts in such a manner violates the ESA's requirement for stringent enforcement of its procedural requirements. The agency's current approach defies Congress's intent for ESA consultation, namely, that it provide an independent, objective, and fully-supported analysis of a proposed action.

Response: NMFS disagrees that it was inappropriate or illegal for the agency to provide feedback to the Council on Alternative 5, the preliminary preferred alternative (PPA). NMFS presented an initial analysis of the conformance of Alternative 5 to the performance standards for Steller sea lion protection measures in Section 1.10.3 of the DEIS at the June 2013 Council meeting to provide early feedback to the Council on its PPA. This early feedback was intended to assist the Council should it wish to consider a modified set of management measures with less potential impacts to Steller sea lions when it recommends a preferred alternative for the final EIS. In fact, this type of input is exactly what is envisioned for an informal consultation process (see the U.S. Fish and Wildlife and NMFS's Endangered Species

Consultation Handbook (USFWS and NMFS 1998) and NMFS believes it would have been negligent not to provide initial feedback given the best available information. Providing this type of feedback does not conflate NMFS's obligations under NEPA and the ESA.

ESA Compliance

CH1-21 Comment: NMFS should take the following steps regarding Steller sea lion protection measures for the Alaska groundfish fisheries. Take appropriate regulatory action to vacate the management measures implemented by the interim final rule in time for the 2013 fishery and revert to 2001 measures except where no longer appropriate (e.g., Harvest Limit Area regulations). Adopt an expedited schedule for completion of the EIS so that it supports the completion of rulemaking for a final rule with new final management measures such that these measures can be fully in place for start of the 2014 fishery.

Concurrent with the expedited EIS process, immediately reinstitute ESA consultation with regard to Central and Western Aleutian Islands fisheries management, and prepare a biological opinion that incorporates the findings and recommendations of the Center for Independent Experts (CIE) review and Bernard et al. (2011). These findings substantially change what is the best scientific information that is now currently available, and the new biological opinion should reflect this new information as it reconsiders the jeopardy and adverse modification determinations for groundfish fisheries in the Aleutian Islands.

Response: NMFS cannot take the recommended actions as these would not meet the U.S. District Court for the District of Alaska order for the preparation of the EIS. NMFS cannot vacate the interim final rule; but has begun the process to consider revised protection measures following the applicable analytic and regulatory process, including working with the Council. NMFS started that process by developing the DEIS. Alternative 4 in the DEIS is the 2001 measures with slight modifications. NMFS is following the schedule for completing the EIS established by the U.S. District Court for the District of Alaska. NMFS reinstituted ESA Section 7 consultation on May 10, 2013. The Section 7 consultation will be completed on the agency action, when the action has been determined.

CH1-22 Comment: Include a discussion of the designation of significant portion of its range (SPOIR) for the U.S. WDPS of Steller sea lions. The term "endangered species" means any species that is in danger of extinction throughout all or a significant portion of its range. NMFS has proposed declaring SPOIR for the eastern distinct population of Steller sea lion in the *Federal Register* notice for delisting the eastern distinct population segment but has not done so for the WDPS. NMFS trend site analysis has long depicted the core of the WDPS as Kenai to Kiska. The CIE reviewers noted the absence of analysis in the 2010 FMP biop of the differential importance of core and fringe subareas to the total population.

Response: The DEIS uses the best scientific information available regarding the range of Steller sea lions as provided in the 2010 FMP biop. The discussion of SPOIR is related to the listing or delisting of an ESA-listed species and does not provide additional information that would inform the analysis of the effects of the fisheries on Steller sea lions. To ensure the EIS is a concise, focused document, only issues relevant to the analysis of the effects of the alternatives on Steller sea lions are included. A general discussion of the SPOIR is available in the proposed rule to delist the eastern distinct population segment of Steller sea lions published in the *Federal Register* (75 FR 23209, April 18, 2012).

CH1-23 Comment: Although NMFS has committed to preparing a new biological opinion to be completed in time to coincide with completion of the final EIS, this commitment presently is unnecessary in light of the fact that the 2010 FMP biop has been upheld in Federal court. NMFS is under no obligation at this time to prepare a new biological opinion. It is possible that the current NEPA process

eventually may require NMFS to revisit the agency's 2010 FMP biop and interim final rule; however, that is unknowable at this time and will remain so until, at the very least, a preferred alternative is definitively identified. Until then, NMFS must refrain from offering preliminary or incomplete ESA opinions. Significantly, the district court recognized that future NEPA and ESA analyses should be kept separate.

Response: On May 10, 2013, NMFS Sustainable Fisheries Division requested reinitiation of consultation on the Aleutian Islands Atka mackerel, Pacific cod, and pollock fisheries, based on changes to the action that may result in effects not previously analyzed. On July 29, 2013, NMFS Protected Resources Division (PRD) replied that the preliminary preferred alternative is similar to the proposed action analyzed in the 2010 FMP biop, but in response to external reviews NMFS is conducting several new analyses that could potentially lead NMFS to draw different conclusions about the effects of the fisheries on Steller sea lions. Thus, PRD concurred that reinitiation of formal consultation is advisable. NMFS will continue to work with the Council in its recommendation of a preferred alternative. NMFS will continue the ESA consultation process when the proposed action is identified.

CH1-24 Comment: NMFS should reconsider its policy choice regarding its treatment of recovery plan criteria in the EIS and as the basis for jeopardy determinations in the upcoming biological opinion.

Response: NMFS will expand the discussion in Section 1.9.4 of the final EIS regarding the recovery criteria and the use of those criteria in biological opinions. The 2008 Recovery Plan for Steller sea lions (NMFS 2008) is the most recent recovery plan completed by NMFS for Steller sea lions and continues to be the best scientific information available to understand the measures needed for recovery of Steller sea lions, and is incorporated by reference in the EIS.

CH1-25 Comment: Reducing protections in the Aleutian Islands will not allow the agency to meet its obligation to insure that it is not causing jeopardy or adverse modification, including continuing to allow for recovery of the species. According to the Recovery Plan, and based on the best available science, Steller sea lion recovery depends upon both (1) long-term, sustained growth in the overall western population and (2) avoidance of localized declines in the individual sub-regions comprising the larger stock. Widely distributed rookeries serve to maintain populations throughout the species' range, meaning that all parts of the range must remain occupied to ensure recovery. Widely distributed rookeries also provide an important source of genetic diversity that exists now but would be threatened by additional fragmentation of the population.

Response: NMFS agrees that sub-regions of the Steller sea lion population are important for the recovery of the entire WDPS of Steller sea lions. As stated by the commenter, this is consistent with the most recent recovery plan. The potential effects on the Aleutian Islands subarea portion of the WDPS are analyzed in Chapter 5. The NEPA and ESA processes will allow NMFS to identify any appropriate changes that can be made to the Steller sea lion protection measures that insure the groundfish fisheries are not likely to cause jeopardy and that minimize, to the extent practicable, economic impacts on the fisheries.

Magnuson-Stevens Act Compliance

CH1-26 Comment: If NMFS had adequately considered National Standard 1, it would have realized that its DEIS is not consistent with the Magnuson-Stevens Act. The DEIS concludes that the optimum yield limits on harvests in the BSAI and in the Gulf of Alaska contain overall harvest of groundfish, and that the 2 million metric ton optimum yield cap in the BSAI also contributes significantly to preventing overharvests. The controls on fishing mortality in setting harvest specifications ensure the stocks are able to produce maximum sustainable yield on a continuing basis. This conclusion is flawed because it

presumes that the closures, harvest limitations, and additional restrictions on the Atka mackerel and Pacific cod fisheries are necessary to protect the prey of the WDPS of Steller sea lions.

Response: National Standard 1 states that conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the U.S. fishing industry (16 U.S.C. 1851(a)(1)). The 2010 FMP biop and the best scientific information available established the potential for Atka mackerel and Pacific cod fisheries to impact Steller sea lion prey and the need for measures to protect Steller sea lion prey. NMFS is complying with National Standard 1 in its management of the groundfish fisheries. Chapter 3 contains a discussion of the effects of the alternatives on target species and shows that none of the alternatives impact NMFS's ability to prevent overfishing. NMFS uses separate optimum yields for the combined groundfish fisheries in the Gulf of Alaska and in the BSAI. The comment cites DEIS text that refers to the management of the groundfish fisheries through the annual harvest specifications, not the alternatives under consideration in this EIS. The annual harvest specifications process includes adjustments of total allowable catch for individual fisheries in consideration of acceptable biological catch and fishery restrictions to provide for the overall groundfish fishery to achieve the BSAI optimal yield of 2 million metric tons. As discussed in Chapter 3, none of the alternatives impact the ability of the fisheries in these two management areas to achieve the established optimum yields or change the setting of optimum yield. Additionally, Chapter 8 includes discussion of fleet redeployment that is used in consideration of achieving optimal yield from each fishery.

CH1-27 Comment: Contrary to NEPA's requirement that it address responsible opposing scientific views (see 40 CFR 1502.9(b)), the DEIS postpones analysis of the scientific uncertainty surrounding the effects of fisheries on Steller sea lion prey resources to the Section 7 consultation. This strategy violates the Magnuson-Stevens Act's National Standard 2 because NMFS cannot make a decision based on the best science available if it declines to consider relevant scientific information.

Response: National Standard 2 states that conservation and management measures shall be based upon the best scientific information available (16 U.S.C. 1851(a)(2)). NMFS uses the best scientific information available in the EIS and highlights where information is lacking or where there is scientific uncertainty or controversy. Section 1.10.2 describes the best available information used in the DEIS, including scientific information on which to base conservation and management measures. The DEIS does directly address opposing scientific views that are relevant for the DEIS analysis in Section 5.2.2. The DEIS also explains how NMFS is addressing the opposing scientific views that are not relevant to the DEIS analysis. NMFS has explained that it is conducting ongoing analyses to directly address the opposing scientific views that are relevant to the Section 7 consultation. NMFS began the formal Section 7 consultation on May 10, 2013. Once the Council recommends a preferred alternative, NMFS will consider this recommendation in the Section 7 consultation on the proposed action using the best available commercial and scientific information. Depending on the outcome of that consultation, NMFS will determine whether it is necessary to supplement the DEIS or move forward with finalizing the EIS following the CEQ regulation at 40 CFR 1502.9. NMFS will make a final decision on the proposed action after the conclusion of the consultation and final EIS.

CH1-28 Comment: NEPA compliance mandates that the EIS consider any possible conflict that Alternative 5 has with National Standard 5.

Response: National Standard 5 states that conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources, except that no such measure shall have economic allocation as its sole purpose (16 U.S.C. 1851(a)(5)). NMFS has not selected a preferred alternative; therefore it is premature to make determinations about whether the proposed action is consistent with National Standard 5. The alternatives were designed to account for the efficient harvest of

the target species while meeting other mandates under the ESA and Magnuson-Stevens Act. The final EIS will explain how the final preferred alternative best meets the purpose and need and complies with the Magnuson-Stevens Act.

The DEIS considers efficiency in the utilization of fishery resources in Chapter 8. Chapter 8 describes the sectors participating in the harvest of target species and the potential behavior of the fleets to redeploy to efficiently harvest the available quota. Chapter 8 meets the E.O. 12866 Regulatory Impact Review (RIR) requirement for a cost-benefit analysis and evaluates the five alternatives and their options that are under consideration. Cost-benefit analysis is a standard tool for comparing the economic efficiency of alternative actions. Data limitations preclude a complete summarization of all costs and benefits, or the calculation of net benefit estimates for the different alternatives. In accordance with E.O. 12866, the RIR provides qualitative analysis where it is not possible to provide a quantitative analysis. Alternative 5 is evaluated along with the other four alternatives. This information will be considered in the selection of a preferred alternative, ensuring National Standard 5 is considered in the decision making.

CH1-29 Comment: NMFS must address National Standard 7 in the EIS, and discuss whether any of the alternatives are consistent with it in order to ensure compliance with NEPA's requirement to address potential conflicts with Federal policies, plans, and controls. NMFS does not currently do so.

Response: National Standard 7 states that conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication (16 U.S.C. 1851(a)(7)). The purpose and need for the action in Section 1.3 specifically states that the action should minimize costs to the extent practicable. Chapters 8 and 10 provide information on how to evaluate the costs under each alternative. The analysis in Chapter 8 identifies the costs of the five alternatives to the extent that it is possible to do so, providing decision makers with a summary of the information that is available for choosing an alternative that addresses this, and the other, National Standards. The intent of these alternatives is to protect Steller sea lions by implementing reasonable and prudent alternatives. Each alternative, if chosen, would either confirm or replace the existing measures, and would not duplicate existing measures.

CH1-30 Comment: National Standard 8 calls on agencies to account for the importance of fishery resources to fishing communities in a way that provides for the sustained participation of and minimizes adverse economic impacts to such communities. NMFS does not address how the proposed action or other alternatives conflict with the sustained participation of, and minimize adverse economic impacts on, communities. This discussion is especially lacking for Adak. In light of significant community harm, the EIS must comply with its NEPA obligation to explain how its proposed action is consistent with its responsibility under National Standard 8 to provide for the sustained participation of and minimize economic impacts to fishing communities. If it did so, NMFS would identify that the restrictions encompassed in the proposed alternative are inconsistent with National Standard 8 because the restrictions are unwarranted. NMFS cannot demonstrate that continued closures of and restrictions on fisheries will support the recovery of the Steller sea lion WDPS; therefore, it must address how this finding conflicts with its requirement to provide for the sustained participation of and minimize adverse economic impacts to fishing communities.

Response: NMFS evaluates five alternatives, including four action alternatives, one of which would return fishery management (with minor changes generally relaxing restrictions) to the 2010 management regime that preceded the interim final rule. The analysis evaluates, so far as possible with the information available, the impacts of these five alternatives on geographical communities, such as Adak or Atka, or communities of interest, such as Aleut Corporation stockholders. Chapter 10 evaluates the importance of fishery resources to fishing communities using the concepts of engagement with and dependency on the fisheries. This analysis summarizes the information available to decision makers who must balance

National Standard 8 with the other national standards. This balancing is done by decision makers rather than the EIS.

NMFS disagrees that there is a conflict with National Standard 8 on the grounds that the restrictions are unwarranted. National Standard 8 provides that “[c]onservation and management measures shall, consistent with conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of Paragraph (2), in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.” Management measures authorized by the Magnuson-Stevens Act must be consistent with *the national standards and other applicable laws* (emphasis added). NMFS appropriately applied the ESA in determining that the interim final rule was necessary to insure the groundfish fisheries were not likely to jeopardize the continued existence of the WDPS of Steller sea lions. Another important consideration in National Standard 8 is the phrase “to the extent practicable,” which immediately precedes “minimize adverse economic impacts on such communities.” The 2010 FMP biop and subsequent reviews provide important information for developing reasonable alternatives for the proposed action for analysis in the EIS.

CH1-31 Comment: While NMFS discusses bycatch in several places throughout the DEIS, it does not specifically state whether its proposed action and other alternatives will actually minimize bycatch of implicated species to the extent practicable as required under National Standard 9. Rather, it concludes that the impacts of the proposed alternatives on fisheries bycatch are difficult to comprehensively assess (DEIS at ES-45). This conclusory assertion is insufficient under NEPA. The EIS must address whether its proposed action conflicts with the goal of minimizing bycatch, as required by NEPA.

Response: National Standard 9 states that conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch (16 U.S.C. 1851(a)(9)). Section 3.5 analyzes the effects of the alternatives on other groundfish species, including the bycatch of these species under the alternatives. Section 4.7 explains the effects of the alternatives on the bycatch of prohibited catch species, non-specified species and forage species, comparing the action alternatives to the no action alternative. Section 5.2.1 addresses the incidental take of marine mammals and Section 6.3 addresses the incidental take of seabird species, providing analysis by each alternative and summarizing and comparing the bycatch effects of the alternatives. This information can be considered in the selection of a preferred alternative, ensuring National Standard 9 is considered in the decision making. The quote from page ES-45 in the DEIS is missing the rest of the sentence which states “The lack of data as well as dynamic nature of the Aleutians Islands ecosystem suggest that the impacts of the proposed alternatives on bottom up change in ecosystem productivity, fishing and predation morality, top down changes in predation and fishing, total removals from the ecosystem, and fisheries bycatch are difficult to comprehensively assess ...”. This statement does not indicate that assessing bycatch alone is difficult as much as comprehensively assessing all of the issues under the data limitations is difficult.

CH1-32 Comment: To comply with National Standard 10, the EIS should contain a clearer conclusion about whether or not the proposed action would actually promote human safety.

Response: National Standard 10 states that conservation and management measures shall, to the extent practicable, promote the safety of human life at sea. 16 USC 1851(a)(10). NMFS has not selected a preferred alternative; therefore, it is premature to make determinations about whether the proposed action is consistent with National Standard 10. The final EIS will explain how the final preferred alternative best meets the purpose and need and complies with the Magnuson-Stevens Act. Safety issues are discussed in Section 8.17.1 of the DEIS and the analysis indicates the performance of the alternatives

relative to safety using the best available information. The first paragraph explains the difficulties with preparing a quantitative evaluation of the net safety impact of each of the complex set of alternatives. These include data shortcomings and limited understanding of the relationship between fishery management and accident causality. In light of these difficulties, the discussion is necessarily limited to a qualitative discussion of five issues that are believed to be related to safety and how these may be related to the five alternatives. This information will be considered in the selection of a preferred alternative, ensuring National Standard 10 is considered in the decision making.

CH1-33 Comment: The DEIS does not adequately address how and whether the proposed action complies or conflicts with applicable Federal, regional, or local plans and policies for the area concerned. At the Federal level, NMFS fails to adequately explain whether the proposed action is, or alternatives are, consistent with the Magnuson-Stevens Act National Standards. NMFS must address this point in the DEIS, both because NMFS's underlying Magnuson-Stevens Act regulatory action is subject to NEPA, and because an EIS's environmental consequences section must address "[p]ossible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned" (40 CFR 1502.16(c)). NMFS explicitly addresses only National Standards 1, 2, and 8. It devotes more than cursory consideration only to Standards 8 and 10. This limited analysis is inadequate under NEPA and provides the public with no way of knowing whether NMFS has adequately addressed compliance with the Magnuson-Stevens Act. NMFS must comply with NEPA by addressing the possible conflicts that its proposed action has with National Standard 4. NMFS neither mentions National Standard 6 nor discusses whether its proposed action is consistent with it, thereby violating its obligation to consider potential conflicts with the Magnuson-Stevens Act National Standards.

Response: NMFS has not selected a preferred alternative; therefore, it is premature to make determinations about whether the proposed action complies with applicable Federal law. The DEIS itself does not attempt to balance the National Standards. The Council must consider and weigh all National Standards when recommending its preferred alternative. Similarly, NMFS must ensure that any action it takes pursuant to the Magnuson-Stevens Act is consistent with the National Standards. The final EIS will explain how the preferred alternative best meets the purpose and need and complies with the Magnuson-Stevens Act. The DEIS endeavors to analyze all impacts from the alternatives in order to disclose such information to the public and provide the decision-makers with the necessary information to balance the National Standards and render a final decision.

Section 1.5 of the DEIS explains the relationship of this action to Federal law. Section 1.10.4 discusses the alternatives relative to regional or local plans and policies in the area concerned.

The DEIS addresses the National Standards throughout the document in the analysis of the effects of the alternatives. NMFS addresses National Standards 1, 2, 5, 7, 9, and 10 in response to the subsequent comments. The following provides examples of where information can be used to consider consistency with National Standards 3, 4, 6, and 8:

National Standard 3 states that, to the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination (16 U.S.C. 1851(a)(3)). The management of fish stocks is discussed in Chapter 3 of the DEIS. None of the alternatives would change how NMFS manages individual fish stocks as units throughout their range.

National Standard 4 states that conservation and management measures shall not be discriminated between residents of different states (16 U.S.C. 1851(a)(4)). The effects on residents of different states from the conservation and management under the alternatives are discussed in Chapter 10 of the DEIS. Though

community impacts may occur more for some Aleutian Islands communities, fishery restrictions would apply to participants in the fisheries from Alaska, Washington, and Oregon with no discrimination between residents of different states.

National Standard 6 states that conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches (16 USC 1851(a)(6)). The alternatives are designed to account and allow for variations among and contingencies in fisheries, fishery resources, and catches. These alternatives are described in detail in Chapter 2, including the considerations in the development of the alternatives to address fisheries, fishery resources, and catches.

National Standard 8 states that conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data based on the best scientific information available, in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities (16 U.S.C. 1851(a)(8)). Chapters 8 and 10 of the DEIS use the best scientific information available to determine the economic and social impacts of the alternatives and to determine the importance of the fisheries for fishing communities. Chapter 10 provides detailed information on several fishing communities that may be particularly impacted by this action. This information supports the decision making to select a preferred alternative that considers sustainable participation by communities in the fisheries and to minimize to the extent practicable the economic impacts on these communities.

CH1-34 Comment: Given the lack of data and information on which to assess population-level effects of increased fish harvests in and around the western and central Aleutian Islands, NMFS should adopt a precautionary approach in the development of the final EIS and any subsequent rulemaking.

Response: NMFS acknowledges the comment, and endeavors to use a level of precaution in its decision making that is commensurate with the level of confidence it has in the best scientific information available to make its decision and the specific requirements imposed by law.

Chapter 2 Comments

These comments are on Chapter 2, the description of the alternatives, and alternatives considered and not further analyzed. An overview of each alternative is provided in the beginning of this draft Comment Analysis Report. Details of the protection measures under each alternative analyzed in the DEIS are in Chapter 2. The comments received on Chapter 2 focused primarily on information that may have been lacking to understand the alternatives, the reasonable range of alternatives, and the preferred alternative.

More information needed

CH2-1 Comment: Include a qualitative and quantitative description of the management actions that have resulted in closures in the Aleutian Islands since 1997, for example, closure of the directed pollock fishery, closures of habitat areas of particular concern, essential fish habitat (EFH) closures, 2001 biological opinion Steller sea lion management closures, and 2010 FMP biop measures. The EIS should include a description and chart of the areas that have been closed to fishing and include an analysis of the additive effects of those closures for Steller sea lions (prey resources and availability) and fishing fleets (re-distribution of fishing effort). The EIS also should provide a description of management measures taken that facilitate distribution of fishery catches over time and area and minimize the race for fish, such as Amendment 80, Amendment 85, parallel fisheries licensing requirements, and trawl recency. The discussion should include (1) potential changes in bycatch and prohibited species catch, (2) regulatory limitations and license limitations/requirements for vessels to move into new areas to fish for different species or with different gear types, (3) limitations of vessel configurations for converting to different fisheries or gear types, and (4) inability of fixed processing plants in the Aleutian Islands to shift locations and fisheries.

Response: To avoid being encyclopedic, the DEIS presents the information that would provide an understanding of the alternatives and their effects on the human environment, incorporating by reference from the Programmatic Supplemental EIS for the Alaska Groundfish Fisheries (NMFS 2004b) and from the Alaska Groundfish Harvest Specifications EIS (NMFS 2007), which contain past fisheries management descriptions. The DEIS incorporates by reference the discussion of the changes to fisheries management measures since 2003 in the EA for the interim final rule. The management measures applied in 2003 were those analyzed in the 2001 biological opinion on the Alaska groundfish fisheries.

A single figure of the Atka mackerel, Pacific cod, and pollock fisheries and their closures would be difficult to read due to the complications with types of closures, seasons, areas, and gear types; therefore, no such figure is included in the DEIS. NMFS Alaska Region provides a mapviewer application that would allow one to create a map that shows all of the fishery management closures in a single view at <http://alaskafisheries.noaa.gov/sustainablefisheries/sslpm/>. Chapter 2 of the DEIS includes figures showing by fisheries the overlay of the Steller sea lion protection measures and the Aleutian Islands Habitat Conservation Area closures for the nonpelagic trawl gear fisheries. The additive effects of the additional fisheries management measures are considered in the analysis of the impacts of the alternatives in Chapters 3 through 7. Section 5.2.2.2 incorporates the Aleutian Islands Habitat Conservation Area closures in the consideration of critical habitat closed under each alternative for Atka mackerel and Pacific cod trawl fisheries. The redistribution of fishing effort in consideration of license limitations is discussed in Chapter 3 under each of the target species and in greater detail in Sections 8.3.3, 8.4.3, and 8.5.3. Potential effects on bycatch and prohibited species catch are discussed in Sections 3.5.4.7, 8.3.3, 8.4.3, and 8.5.3. Limitations on vessels entering other fisheries, which may include changing configurations, are discussed in the redeployment sections of Chapter 8. Shore-based Aleutian Islands processing facilities are discussed in detail in Chapters 8 and 10.

CH2-2 Comment: Section 2.1 and Section 2.2 lack an analysis of each of the alternatives (and their varied management measures) in conjunction with other existing area and seasonal closures (such as EFH). The DEIS should be revised to provide a cumulative impacts analysis of all of the closures to which the BSAI groundfish fisheries are currently subject, as well as any further closures under each of the alternatives. This would result in the documentation and evaluation in Section 2.1 of the actual amount of area closed and the cumulative impact of these closures on Steller sea lion habitat and prey field under each alternative. Section 2.2 should then include a comparison of these cumulative impacts between alternatives. Given that the only measure currently employed in this DEIS to compare alternatives is the sheer amount of area closed to fishing, this metric at least should be applied consistently across all alternatives and this cumulative closure information should be made available to the public.

Response: Chapter 2 provides a description of the alternatives, rather than an analysis of cumulative effects. Section 2.1.1 provides a description of the State of Alaska Fisheries and general Aleutian Islands groundfish fisheries management that applies under the status quo and all other alternatives, so the reader can understand the baseline for the fisheries management to which the alternatives would be applied. This description includes State of Alaska parallel fisheries management, Amendment 82 pollock fishery management, Amendment 80 non-American Fisheries Act trawl management, gear splits under Amendment 85 for Pacific cod, and EFH protection measures. The description of the alternatives in Chapter 2 include the additional non-pelagic trawl gear closures that occur under the Aleutian Islands Habitat Conservation Area as shown in Figures 2-4 through 2-7, 2-15, and 2-26 through 2-28. In addition, in Section 5.2.2, the analysis of the harvest of prey species includes consideration of the portion of critical habitat that would be open when the Aleutian Islands Habitat Conservation Area is considered with each alternative's closures (Tables 5-20, 5-30, 5-31, 5-36, 5-46, 5-47, 5-55, 5-56, 5-57, 5-65, 5-70, 5-76, and 5-79). These tables in Chapter 5 allow the reader to compare the cumulative closures under the alternatives. Additional cumulative impacts, including fisheries management, are described in Section 1.10.4, and incorporated into the analysis of the effects of the alternatives as appropriate in each chapter on an environmental component, including Steller sea lions (Section 5.3).

CH2-3 Comment: Data exist regarding the biomass, acceptable biological catch, and harvest levels for all of the Steller sea lion prey species in the Aleutian Islands region. The locations of commercial harvest and critical habitat are also known. Estimates of the amount of prey left in important areas could be made for each alternative, and correlated with what is known about Steller sea lion foraging and nutritional requirements. But Chapter 2 does not include this kind of synthesis, and therefore the DEIS does not provide any meaningful methods to compare and evaluate the efficacy of the alternatives.

Response: Chapter 2 is a description of the alternatives to be analyzed in the EIS. Information on the biomass and harvest of target species in the fisheries that are also Steller sea lion prey is in Chapter 3. Chapter 5 contains analysis of the harvests that would occur under each alternative and the potential impacts on Steller sea lions in Section 5.2.2. This analysis shows the different amounts and locations of harvests of prey species that may occur in the three statistical areas and within critical habitat and provides the contrasting potentials for effects on prey resources among the alternatives. Information is not available to estimate the amount of prey left in an area in relation to Steller sea lion foraging needs on the local scale as biomass for the target species is understood primarily on a statistical area or Aleutian Islands-wide scale.

CH2-4 Comment: The EIS should evaluate the impacts that multiple fishery restrictions have had on the consolidation of fishery catch into small geographic areas that remain open to fishing.

Response: The DEIS explains at page 2-10 that a large portion of the Aleutian Islands subarea is closed to nonpelagic trawling. Nonpelagic trawl gear is used for harvesting Atka mackerel and Pacific cod. The

closures to nonpelagic trawling include the Aleutian Islands Habitat Conservation Area (AIHCA), the Aleutian Islands Coral Habitat Protection Areas, and the Bowers Ridge Habitat Conservation Zone, located in the northern portion of Area 542 and 543 (Figure 2-4). The EFH closures were implemented on July 28, 2006 (71 FR 36694, June 28, 2006), and revised March 20, 2008 (73 FR 9035, February 19, 2008). The AIHCA closed most of the Aleutian Islands subarea to nonpelagic trawling (279,114 nm²), while most fishing areas that have been trawled repeatedly in the past remain open. The Bowers Ridge Habitat Conservation Zone is closed to mobile bottom contact gear, including nonpelagic trawling. The Aleutian Islands Coral Habitat Protection Areas are relatively small, discrete areas closed to bottom contact gear. Even though an area may be open to nonpelagic trawling, the area may be closed to Atka mackerel or Pacific cod trawling based on Steller sea lion protection measures, leaving discrete locations throughout the Aleutian Islands subarea that are open to nonpelagic trawl gear fishing, as shown in Figure 2-5 of the DEIS. The AIHCA, which became effective on July 28, 2006 (71 FR 36694, June 28, 2006), applies to nonpelagic trawl gear, which is used to harvest Atka mackerel and Pacific cod. Even though portions of critical habitat would be open to trawl gear under an alternative, these areas would contain prohibitions on nonpelagic trawl gear that would further limit locations available to harvest Atka mackerel and Pacific cod by nonpelagic trawl gear. AIHCA is described in general terms in Chapter 2 and on page 2-10. Figures 2-5 and 2-6 in Chapter 2 show overlays of critical habitat and AIHCA. Figure 2-26 shows overlays of AIHCA, Aleutian Islands Coral Habitat Areas, and critical habitat. This topic is further discussed at page 5-106 in Chapter 5. In Chapter 8, the analysis uses a baseline period from 2004 to 2010. Thus for the period from July 2006 through 2010, the analysis reflects the fishing patterns that developed in response to the introduction of EFH regulations. NMFS discusses regulatory changes during the baseline years at page 8-71, and will modify the discussion to list the introduction of habitat conservation and protection measures as one of the events taking place during this period, and to provide a reference back to discussions in Chapters 2 and 5.

CH2-5 Comment: The comparison of alternatives at Section 2.2 rests largely on areas closed. Nowhere in Chapter 2 is there any information quantifying the effect of each alternative and its related fishery management measures relative to the amount of prey required by Steller sea lions, the area where the prey are needed, the amount of prey that would then be available to Steller sea lions under alternative scenarios, or any of the other direct effects of the alternatives or the management measures on Steller sea lions and their habitat. Without this information, the analysis leaves it to inference and speculation about whether or not any of the management measures would have any beneficial effect for Steller sea lions, or what a reasonable alternative set of management measures might be. Similarly, without this information, the reader has no ability to compare and contrast alternatives, which is required for informed decision making under NEPA.

Response: The reasonable range of alternatives is derived from the purpose and need for the action, which is described in Section 1.3. Section 2.2 provides a comparison among alternatives of the seasons, statistical area specific closures, catch limits, and other management measures that would be applied by fishery under each of the alternatives. These differences among alternatives are provided by fishery specific tables that compare the alternatives and by groups of maps by fishery to visually compare the closures that would be applied to the fishery under each alternative and option. Section 5.2.2 provides the analysis of the effects of the alternatives on Steller sea lion prey species, providing quantitative catch information inside and outside critical habitat and analysis of this information in the context of what is known about Steller sea lion behavior, diet needs, and prey behavior. Sections 5.2.2.12.1 through 5.2.2.12.5 summarize the results of the prey effects analysis by fishery so one can compare and contrast the impacts of the alternatives on Steller sea lions.

CH2-6 Comment: Chapter 2, along with Chapter 5, fails to include any of the metrics that might be used in the new biological opinion. These analyses should be integrated concurrently to the fullest extent possible. There is no clear linkage between the superficial analyses in Chapter 5 and the evaluation of

Alternatives in Chapter 2. The substance that would help the reader evaluate alternatives and make reasoned comments or decisions is absent from the DEIS.

Response: Section 1.10.3 provides the performance standards for Steller sea lion protection measures resulting from the analysis in the 2010 FMP biop and as modified in response to external reviews of the 2010 FMP biop. These standards were used to guide the development and analysis of the alternatives in the DEIS to inform the decision maker on the potential effects of the alternatives on Steller sea lions given the best scientific information available to NMFS. In June 2013, NMFS presented to the Council the analytical approach that it intends to use to examine the effects of the proposed action under Section 7 of the ESA. The Endangered Species Act evaluation will include several qualitative and quantitative analyses to determine whether NMFS can insure that the proposed action does not jeopardize the continued existence of the WDPS of Steller sea lions or adversely modify designated critical habitat. If results of those analyses indicate that NMFS has not insured that jeopardy and adverse modification are not likely, then NMFS will provide a reasonable and prudent alternative to insure that jeopardy and adverse modification are not likely.

CH2-7 Comment: The DEIS is so inadequate as to preclude meaningful analysis, requiring NMFS to prepare and circulate a revised draft of Chapter 2, particularly Sections 2.2 and 2.3, prior to preparation of the final EIS and in time for selection of a proposed action by the Council. Revisions of these key sections are needed in order to meet NEPA's requirements to provide a full and fair discussion of significant environmental impacts and inform decision makers and the public of the reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment.

Response: Section 2.2 is a summary comparison of the features of the alternatives by fishery. This provides someone who is interested in a particular fishery an easy method to rapidly compare and contrast the alternatives in relation to a single fishery. Section 2.3 is the description of alternatives considered but not further analyzed. It is not clear from the comments what improvements are needed to these sections. Chapters 3 through 7 provide a full and fair discussion of significant environmental impacts and inform decision makers and the public of the reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment. NMFS does not agree that a supplemental DEIS is necessary at this time. No new information has been identified that would indicate a revised draft EIS is required. NMFS will make changes to the final EIS in response to specific public comments, as detailed in the specific responses.

Range of Alternatives

CH2-8 Comment: The Pribilof Islands and Round Island are geographically distinct from the Aleutian Islands, and should be included in the EIS but analyzed separately. Re-examine the rookery cluster area that encompasses the Pribilof Islands. The Pribilof Islands is a unique area in the Bering Sea and should not be grouped with another rookery cluster area. Examine the justification for lumping the Pribilof Islands with a portion of the Aleutian Islands.

Response: An alternative that included closures at Dalnoi Point on St. George Island of the Pribilof Islands was considered and not further analyzed, as described in Section 2.3.2 of the DEIS. Pribilof Islands and Round Island are outside of the scope of the action, which is described in the purpose and need in Section 1.3 and is the basis for the reasonable range of alternatives. The rookery cluster areas were mentioned in Section 5.1.1 of the DEIS, but are not used in the analysis of the effects of the alternatives and therefore are not further evaluated in the DEIS.

CH2-9 Comment: Include the alternatives developed by the Council and its Steller Sea Lion Mitigation Committee.

Response: NMFS worked with the Council and its Steller Sea Lion Mitigation Committee to identify the reasonable range of alternatives for analysis in the DEIS. Alternative 1 is the no action alternative, which are the protection measures under the 2010 interim final rule. Alternative 4 includes the management measures in place before the interim final rule, as adjusted to account for changes in fisheries management since 2003. Alternatives 2, 3, and 5 were developed through the Steller Sea Lion Mitigation Committee and Council process. Reductions in pollock closures are included in Alternatives 2, 3, 4, and 5.

CH2-10 Comment: Given the findings and conclusions of the reviewers of the 2010 FMP biop, it is not reasonable or appropriate to include an alternative that is more precautionary and more restrictive on fishing than the current protection measures (Alternative 1). Since the scientific premise for Alternative 1 has been found to be baseless, it is imperative that NMFS consider a number of other, less stringent, alternatives in its EIS.

Response: NMFS acknowledges the comment.

CH2-11 Comment: The range of alternatives is inadequate because it fails to consider alternatives that are more protective of Steller sea lions. Limiting the alternatives to those that reduce existing protections violates the agency's obligation under NEPA to consider all reasonable alternatives to the proposed action, including those that are more protective of Steller sea lions. By refusing to consider more protective alternatives, NMFS has deprived itself of information on the environmental impacts of the unconsidered alternatives. The failure to consider viable alternatives that provide for additional protections is inconsistent with the purposes of the ESA and Magnuson-Stevens Act and prevents the agency from giving full and meaningful consideration to the trade-offs between protecting an endangered species and limiting the economic impacts of protective measures that are clearly contemplated in the proposal's statement of purpose. Without detailed consideration of more protective management measures, the agency lacks a valid baseline that will allow it to judge the feasibility of various suites of management measures.

Response: NEPA requires the agency to specify the purpose and need for an action and to develop the reasonable range of alternatives based on the purpose and need. NMFS determined that alternatives that are more protective than Alternative 1 are outside the purpose and need for this action. NMFS explains why more protective alternatives were considered and not further analyzed in Section 2.3.4.

CH2-12 Comment: NMFS failed to evaluate reasonable alternatives without sufficient justification. In addition to the more protective measures the agency considered during preparation of the 2010 FMP biop, feasible alternative management measures were presented to the agency during the scoping process and at other times. These proposed management changes include:

- Committing to managing Pacific cod in the Bering Sea and Aleutian Islands as two separate stocks;
- Establishing a maximum yield cap for the Aleutian Islands;
- For prey species in the Aleutian Islands, setting optimum yield so that biomass is predicted to increase to B60 over a 20-year time horizon;
- Modifying the global control rule for prey species so that α is 0.75 and fishing is stopped at B30 for fisheries in the Aleutian Islands;

- Committing to a formal implementation strategy for aspects of the Aleutian Islands Fishery Ecosystem Plan, such evaluating options to incorporate predator needs in the TAC-setting process; and
- Protecting critical habitat, such as areas surrounding rookeries and haulouts in the Pribilof Islands.

Other than the first one listed above (managing Pacific cod in the Bering Sea and Aleutian Islands as two separate stocks), the agency rejected these measures. The DEIS justifies the exclusion of alternatives like those presented above on the grounds that they were not considered in the 2010 FMP biop, are inconsistent with the statement of purpose and need, and would “require extensive work.” None of the reasons provide legal justification for failing to consider a viable alternative.

Response: Section 2.3.4 describes why these alternatives were not further analyzed. Of the reasons provided, the most compelling is that these measures are outside the purpose and need for this action. The 2010 FMP biop did not identify the need to further restrict fisheries to protect Steller sea lions beyond the measures in Alternative 1. And, any measures that increased fishery restrictions were determined by NMFS to most likely increase economic impacts of the fishery participants, inconsistent with the purpose and need.

CH2-13 Comment: The DEIS reason for not considering rejected alternatives based on the fact that a biological opinion, issued during formal ESA consultation, did not include the proposed measures is irrelevant to determining whether they are reasonable alternatives that NMFS must consider under NEPA. ESA-governed reasonable and prudent alternatives to proposals for resource exploitation are not coterminous with NEPA-governed reasonable alternatives to proposed action. The underlying purpose of identifying potential RPAs during ESA consultation is thus narrower than that of discussing reasonable alternatives under NEPA, where the latter is intended to provide for informed decision-making and public participation by considering all viable alternatives to agency action.

Response: NMFS developed the range of alternatives through the NEPA process. The purpose and need in Section 1.3 is clear in that the agency needs to meet its obligations under the ESA and at the same time minimize, to the extent practicable, economic impacts on those affected by the restrictions under the Steller sea lion protection measures. All alternatives were designed to meet ESA obligations while minimizing, to the extent practicable, the economic effects. Section 2.3.4 describes additional alternatives that were not further analyzed. Of the reasons provided, the most compelling is that these measures are outside the purpose and need for this action. The 2010 FMP biop did not identify the need to further restrict fisheries to protect Steller sea lions beyond the measures in Alternative 1. And, any measures that increased fishery restrictions were determined by NMFS to most likely increase economic impacts of the fishery participants, inconsistent with the purpose and need.

CH2-14 Comment: The management measures adopted in 2010 only address the western and central Aleutian Islands and constitute the minimum protective action that NMFS could have undertaken. While it is true that the sharpest declines in the Steller sea lion population are occurring in the western Aleutian Islands, that fact does not permit the agency to limit the scope of its analysis. Rather, the breadth of the NMFS action ultimately at issue here—management of the groundfish fisheries—necessitates a similarly broad analysis of environmental impacts, addressing the multitude of groundfish fisheries issues, their interrelationships, and their direct, indirect, and cumulative environmental impacts. Based on a likely population-wide trend of low natality, NMFS should have adopted protection measures that extend beyond the western and central Aleutian Islands and address low natality and competition not just with the Atka mackerel and Pacific cod fisheries, but the pollock fishery as well.

Response: NMFS disagrees that the action is the general management of the groundfish fisheries. The scope of the action is limited by the purpose and need for the action in Section 1.3. As explained, the purpose of the action is to implement Steller sea lion protection measures for the Aleutian Islands groundfish fisheries. The action area is defined in Section 1.4. The 2010 FMP biop and the best scientific information available did not identify locations beyond the Aleutian Islands where additional protection measures are necessary to meet ESA obligations. Each alternative contains measures for pollock fishery management. Section 2.3.4 includes consideration of more protective alternatives than Alternative 1 and explains why that type of alternative is outside of the purpose and need for this action, as described in Section 1.3. Additionally, Chapter 5 considers the entire range of the WDPS of Steller sea lions in the impact analysis.

CH2-15 Comment: Examine measures in the DEIS that would move toward better ecosystem-based management. NMFS provides no compelling reason for this failure and, instead, only evaluates alternatives that allow more fishing. The refusal to consider management changes that would benefit the marine ecosystem violates the law and contravenes NMFS's role as steward of our ocean resources. Moreover, the refusal even to consider viable changes in management or more protective measures risks prioritizing short-term economic benefit over long-term sustainability. It also undermines the efforts of those who have participated fully in this process and are committed to working to resolve the longstanding controversy surrounding fisheries management in the Aleutian Islands. For those reasons and others, NMFS should rescind the DEIS and prepare a new draft.

Response: NMFS does not agree that a new DEIS is necessary based on the lack of an ecosystem-based management alternative. All of the alternatives move toward better ecosystem-based management because they are all designed to manage the groundfish fisheries in a way that mitigates the potential impacts of the fisheries on Steller sea lions. Broader ecosystem-based management is outside of the purpose and need in Section 1.3, and the comment did not identify any specific alternatives that are more ecosystem-based and achieve the purpose and need. Section 2.3.4 of the DEIS describes NMFS's consideration of some suggested measures that have been labeled ecosystem-based management and the reasons they are not further analyzed. Further, Chapter 7 provides an analysis of the impacts of each alternative on the ecosystem.

CH2-16 Comment: The DEIS arbitrarily suggests that more protective management measures are inconsistent with the purpose and need because such alternatives would increase costs to fisheries. The agency, however, has no basis on which to estimate the economic impact of more protective alternatives. There is no evidence that more protective management measures will have a greater impact on commercial fisheries, in part because the agency decided not to study these alternatives in any detail. An unsupported assumption of cost is an insufficient basis on which to avoid NEPA's requirement to consider all reasonable alternatives to the agency's proposal.

Response: Steller sea lion protection measures restrict fishing harvests in time and space. The comment did not identify any protection measures to mitigate potential fishery impacts on Steller sea lions that do not restrict the fisheries or that do not have economic costs. Economic impacts from fishery restrictions have been analyzed in every NEPA document addressing Steller sea lion protection measures, including the 2001 Steller Sea Lion Protection Measures Final Supplemental Environmental Impact Statement (NMFS 2001b) and the 2010 EA (NMFS 2010b). The DEIS analyzes the economic impacts of Alternative 1 compared to Alternatives, 2, 3, 4, and 5, which contain fewer protection measures and therefore more fishing opportunity than Alternative 1. Chapters 8 and 10 provide a detailed economic analysis of the economic impacts of increasing protection measures and decreasing fishing opportunity. Therefore, NMFS reasonably assumes that an alternative with more fishery restrictions also is likely to result in additional economic impacts to fishery participants.

CH2-17 Comment: In rejecting ecosystem-based measures, the DEIS misinterprets the harvest specification process. Contrary to the claim in the DEIS that “[t]he needs of predators are incorporated in the harvest specifications process by applying natural mortality (including predation) for a target species stock assessment,” (DEIS at 2-98) there is currently no explicit accounting of predation mortality in the stock assessments for Atka mackerel, Aleutian pollock, or Aleutian Pacific cod. The natural mortality parameter used in the stock assessments are intended to account for all forms of “natural” mortality—including not just predation, but also starvation, disease, stress, and other causes. Further, these parameters are constant, or change little from year to year. The parameters used have little relation to trends in predator populations or the actual level of predation. Even when natural mortality is estimated or derived within a model, the estimates are highly uncertain, derived or used inconsistently between assessments, and may be biased due to changes in populations of predators and the amount of predation.

Response: Insufficient data analysis and modeling are currently available to include time-varying mortality trends for groundfish interactions as the best available science for the Aleutian Islands stocks. The best available science is to estimate constant mortality rates based on long-term data (e.g., through single-species stock assessments).

Best practice in developing multispecies mortality estimates is to use the data (in particular, survey biomass and stomach contents) to estimate functional responses between predator and prey species, which then determine which direct and indirect effects (e.g., fish species eating each others’ young) dominate and determine the direction of an interaction (positive or negative). The work of Kinzey & Punt (2009) found a range of uncertainty in functional responses that was not resolvable in terms of net effects between pollock, cod, and Atka mackerel with the data available at the time. The difficulties in mortality rate and functional estimation include lack of seasonal data (data on predation rates are available only in the summer) and limited coverage due to the infrequency of surveys.

While several more years of diet and survey biomass data have become available since this modeling work was conducted, the lack of Alaska Fisheries Science Center resources to re-perform this modeling means the single-species natural mortality estimates remain the best available science. Other sources of natural mortality (e.g., starvation, stress) are generally not directly measurable and are highly confounded with predation, as stressed animals may be more vulnerable to predation. They are best handled as residual mortality from a satisfactory application of a model such as the Kinzey and Punt model mentioned above.

CH2-18 Comment: Given the lack of data and information on which to assess population-level effects of increased fish harvests in and around the western and central Aleutian Islands, NMFS should apply the selected protection measures within the framework of an adaptive, experimental approach to managing Alaska groundfish fisheries.

Response: The 2008 Revised Recovery Plan for Steller sea lions (NMFS 2008) concludes that an experimental framework of treatment and control areas in which fishing is permitted or prohibited will be required to distinguish between fishing and non-fishing effects on sea lion prey availability. However, the action analyzed in the DEIS is not intended to be an experimental treatment for determining effects of fisheries on Steller sea lion prey availability. The purpose and need for the proposed action is described in Sections 1.2 and 1.3 of the EIS. While not experimental, NMFS applies an adaptive management strategy for the Alaska groundfish fisheries, including management measures designed to protect prey availability for Steller sea lions. Table 2.10 in the 2010 FMP biop shows a chronology of sea lion protection measures implemented in the Alaska groundfish fisheries since 1990 when Steller sea lions were listed as an endangered species under the ESA. Section 2.1.1 of the DEIS describes the fishery management regime implemented in the central and western Aleutian Islands as a result of the conclusions of the 2010 FMP biop. Section 1.10.4 of the DEIS describes NMFS’s past and ongoing

research aimed at understanding movement and abundance of Steller sea lion prey resources, noting that this information can be used to create more effective fisheries management measures to protect Steller sea lions and allow for harvest of prey species.

CH2-19 Comment: Protect every Steller sea lion, including a \$2 million penalty for killing each animal. Put satellites on boats and watch what they do. Make fishermen stop carrying guns on board because they shoot Steller sea lions.

Response: The Marine Mammal Protection Act (MMPA, 16 U.S.C. 1361, *et. seq.*) prohibits the take of marine mammals, including the killing of Steller sea lions, except for subsistence harvests. The current maximum statutory penalty permitted under the MMPA is \$11,000 per violation. All vessels that have Federal fisheries permit endorsed for pollock, Atka mackerel, or Pacific cod fishing (except by jig gear) are required to have a vessel monitoring system in operation when the fishery is open.

Preferred Alternative

CH2-20 Comment: NMFS identified Alternative 1 as being necessary to insure that any potential adverse population-level effects due to prey depletion by commercial fishing activities would not jeopardize the population's survival and recovery. It is unclear how NMFS can select a different suite of measures at this time, yet provide reasonable certainty that its preferred alternative will not result in jeopardy to the species or adverse modification of its critical habitat.

Response: The DEIS provides the best available information to inform the Council's recommendation and NMFS's selection of a preferred alternative that would meet the purpose and need. The 2010 FMP biop concluded that Alternative 1 insured the groundfish fisheries were not likely to result in jeopardy of continued existence or adverse modification of critical habitat. However, Alternative 1 is not the only way to meet this requirement. NMFS will complete an ESA Section 7 consultation on the proposed action to insure the proposed action is not likely to result in jeopardy or adverse modification of critical habitat.

CH2-21 Comment: The DEIS does not justify changing the existing protection measures to allow more fishing. There is no scientific information about the fisheries or Steller sea lions that could justify new measures simply allowing more fishing without a coincident increase in other protections. In fact, the latest information shows that sea lions continue to disappear from the western Aleutian Islands, tagged sea lions are ranging further to feed than previously expected, and populations of Atka mackerel, cod, and pollock are declining. All four models prepared for the 2012 draft assessment for the stock of Pacific cod in the Aleutian Islands indicate a declining biomass trend, and all four suggest that there is a significant probability that the stock is currently overfished and possibly even below the B20 threshold. Similarly, the Atka mackerel population in the Aleutian Islands is on a downward trend, and the recent stock assessment suggests that the acceptable biological catch amounts from the previous few years were overly optimistic.

Response: Section 5.1.1.2 describes the population trends of the WDPS of Steller sea lions and Section 5.1.1.6 describes the at-sea habits of Steller sea lions, including foraging behavior. NMFS agrees that the population of Steller sea lions in the western Aleutian Islands is declining and that adult female Steller sea lions have ranged far offshore and are likely foraging in these areas. The reason for the individual sea lions to range far offshore is not known, especially considering other tagged sea lions remain in inshore waters. NMFS does not agree that the populations of Atka mackerel, Pacific cod, and pollock are declining. The stock status for these species is discussed in Chapter 3. For Pacific cod in the Aleutian Islands the current biomass distribution is 93 percent eastern Bering Sea and 7 percent Aleutian Islands, replacing the previous proportions of 91 percent and 9 percent, respectively. Trawl survey biomass 2012

estimates for Pacific cod show a reduction in biomass in the western Aleutian Islands and an increase in biomass in the Central and Eastern Aleutian Islands compared to 2011, based on the 2012 Stock Assessment and Fishery Evaluation report (Table 2.2.2 in Appendix 2.2 <http://www.afsc.noaa.gov/REFM/Docs/2012/BSAIfcod.pdf>), but trawl survey biomass estimates appear to vary widely among years. The Alaska Fisheries Science Center is developing the Stock Assessment and Fishery Evaluation Report for Pacific cod that will provide an evaluation of several models for developing harvest limits for Pacific cod in the Aleutian Islands. The Aleutian Islands Pacific cod fishery will be managed to ensure overfishing does not occur based on the best available information considered in the harvest specifications process. NMFS agrees that the Atka mackerel abundance trend is down in the Aleutian Islands, but the setting of harvest specifications ensure sustainable management of this stock. Any changes to the Steller sea lion protection measures in the Aleutian Islands will consider the best available information on the effects of the protection measures on the target species stocks and on Steller sea lions, insuring that the fisheries are not likely to jeopardize the continued existence of Steller sea lions.

CH2-22 Comment: Please keep all current protections in place for the Steller sea lions. They are starting to come back from the brink of extinction and need to be protected from harmful fishing practices. It is important that all parts of the area's ecosystem are strong and healthy, and the sea lions are an important part of that balance.

Response: NMFS acknowledges the comment.

CH2-23 Comment: The reviewers of the 2010 FMP biop concluded that the measures in Alternative 1 are unjustified, irrelevant, and have little utility for recovery or effect on population. Remove Alternative 1 from consideration because it represents an alternative that is no longer viable and that is not consistent with the best available science.

Response: NMFS acknowledges the comment.

CH2-24 Comment: The scientific evidence, court decisions, and interim final rule reflect proper execution of NMFS's responsibilities under the ESA and support selection of Alternative 1. The other proposed alternatives are not consistent with the statutory requirements of either NEPA or the ESA. The U.S. District Court for the District of Alaska found that the 2010 FMP biop and accompanying interim final rule were premised on application of the proper ESA standards. The 2010 FMP biop counsels in favor of Alternative 1 as the preferred alternative, as any lesser protection measures than those established by interim final rule likely are unlawful under the ESA. The district court also found that sufficient evidence supported the 2010 FMP biop's conclusions that—without adoption of a reasonable and prudent alternative—the Alaska groundfish fisheries were likely to jeopardize the continued existence of the WDPS of Steller sea lions and adversely modify the species' critical habitat. Unless and until NMFS can determine that the threats that resulted in the past unforeseen and unexplained declines have abated, Alternative 1 represents the maximum spatial extent and amount of fishing that can be permitted by the commercial groundfish fisheries.

Response: NMFS acknowledges the comment.

CH2-25 Comment: The DEIS concludes that there is no basis with any certainty that the alternatives will actually result in any increase in the Steller sea lion population, and that, even if there were such an increase, that this would actually benefit society at large. The "revenue-at-risk" methodology, at least, suggests that there will be a concrete adverse economic impact of the existing fishing restrictions. Given the acknowledgement that there is no determinate, concrete benefit related to the Steller sea lion

measures, a sound cost-benefit analysis basis would suggest that Alternative 4, which essentially involves reverting to the fishing restrictions in place in 2010, be implemented.

Response: Section 8.2.10 summarizes the available scientific information on the value the U.S. public places on the health of the Steller sea lion population; the information in this section indicates that the public places a positive value on improvements in stock health. The analysis at Section 8.13 explains that, “While survey-based evidence suggests that an improvement in the stock population growth rate could have a large value, the reasonable and prudent alternative (RPA) does not predict that the action will necessarily lead to an increase in the rate of population growth of Steller sea lion populations, nor does it make probabilistic statements about the range of potential outcomes.” Thus, while the DEIS does acknowledge the costs of the different restrictions on fishing in the Aleutian Islands, it does not preclude the possibility that these have positive benefits; it simply is not possible to make estimates of potential impacts. The conclusion that Alternative 4 maximizes net benefits may be reached by a reader on the basis of the information contained in the Regulatory Impact Review (DEIS Chapter 8); however, other readers may reach other conclusions. In the absence of reasonably complete quantitative information on costs and on benefits, the analysis does not rank the alternatives with respect to net benefits.

CH2-26 Comment: If the DEIS is finalized without substantial revision, NMFS must select Alternative 5 as the preferred alternative because no significant differences are shown between the alternatives, and Alternative 5 would result in the least economic impacts.

Response: NMFS acknowledges the comment.

CH2-27 Comment: Alternative 5 is a practical combination of some of the more beneficial aspects of other alternatives for the Atka mackerel, Pacific cod, and pollock fisheries, based in large part in response to stakeholder concerns identified during scoping.

Response: NMFS acknowledges the comment.

CH2-28 Comment: Relying on the general principles outlined in the 2010 FMP biop and NMFS’s feedback letter dated May 28, 2013 (NMFS 2013), Alternative 5 should be selected as the preferred alternative for pollock. Alternative 5 should be selected for trawl cod, with the inclusion of a modified provision from Alternative 2 that would only open directed fishing for trawl cod in the area between 173° east longitude and 174.5° east longitude until April 30th and only outside 10 nm from rookeries and outside 3 nm from haulouts. It is more precautionary than the pre-2010 measures from a cod management perspective.

Response: NMFS acknowledges the comment.

Chapter 3 Comments

These comments are on Chapter 3, the analysis of the impacts of the alternatives on target species and species that may be taken incidentally in the Atka mackerel, Pacific cod, and pollock fisheries. The comments received on this chapter focused on the information used in the analysis of the effects of the alternatives on target and non-target species and multispecies modeling for groundfish stock assessments.

CH3-1 Comment: The appropriate baseline for Steller sea lion population data should be from 2000 (and not from 2004) forward. NMFS should also strive to capture that time period (2000 to 2012) in the fishery catch information to the extent practicable.

Response: Section 1.10.1 explains why the years 2004 to 2010 are used as the analytical baseline for fishery catch information. The period 2004 to 2010 is the most recent period reflective of current fishing patterns.

CH3-2 Comment: Overestimates in the 2010 FMP biop of 2008 Aleutian Islands Pacific cod longline catch resulted in requiring longline measures in the alternatives in the DEIS.

Response: The overestimate of 2008 Aleutian Islands longline catch was acknowledged at the Steller Sea Lion Mitigation Committee meeting in 2010 and corrected prior to analysis in the DEIS. The corrected estimates are reflected in various tables throughout the DEIS. Furthermore, the overestimated 2008 Pacific cod longline catch was not the only information used in the 2010 FMP biop to analyze this fishery and is not the reason certain alternatives are proposed. The alternatives represent a broad range of Steller sea lion protection measures and were developed with recommendations from the Council and its Steller Sea Lion Mitigation Committee.

CH3-3 Comment: For each of the alternatives, provide a full explanation of how that alternative will affect the Alaska groundfish stocks' biomass, density, age/size structure, and spatial/temporal distribution throughout the Aleutian Islands region.

Response: Effects on target stocks by the alternatives are described in Chapter 3. NMFS used the best scientific information available in describing any expected effects on target species. Biomass estimates are shown in tables for each of the target species in Chapter 3. No alternative would permit fishing in excess of the acceptable biological catch (ABC); therefore, there were no anticipated effects of the alternatives on the biomass. There were also no expected effects on age/size structure of target species by the alternatives. A discussion on age and size structure of target fisheries will be added to Chapter 3 for the final EIS. This additional information is not included in the analysis of the effects of the alternatives on target species, which is based on the management of the fisheries under the harvest specifications and is not changed by any of the alternatives. The harvest specifications are based on the information from the Stock Assessment and Fishery Evaluation reports, which already incorporate biomass, age, size structure, and distribution in the stock assessments for target species. Effects on target species density on either a spatial and temporal scale were described in Chapters 3 and 5.

CH3-4 Comment: The EIS should include a discussion on biomass estimates, harvest of prey species, prey field density, and Fishery Interaction Team studies on localized depletion.

Response: In Chapter 3, Atka mackerel, Pacific cod, and pollock sections include a table showing biomass estimates and harvest. A discussion on the Fishery Interaction Team studies on localized depletion is in Section 3.2.5 and in Chapter 11. Studies on prey field are discussed in Section 3.2.5, and Chapter 5 discusses potential fisheries effects on prey in Section 5.2.2.1 and analyzes the effects of the alternatives on prey availability for Steller sea lions in Sections 5.2.2.2 through 5.2.2.6.

CH3-5 Comment: The EIS should evaluate the stock status, population trends, and state and Federal fishery removals for salmon and herring.

Response: Stock status information for salmon is incorporated by reference from the Alaska Groundfish Harvest Specifications EIS in Chapter 4 of the DEIS. Salmon removals under the alternatives were addressed in Section 4.3. No stock status information on herring in the Aleutian Islands is available and very little catch of herring (60 mt from 2004 to 2012, primarily in the pollock trip target) occurred in the Aleutian Islands groundfish fisheries. Because of limited information and very small catches, no differences among alternatives are likely to be detected in the analysis on non-target catch of herring; therefore, no additional information on herring is included in Chapter 4.

CH3-6 Comment: The EIS should consider impacts of overfishing of Aleutian Islands pollock and Gulf of Alaska Atka mackerel.

Response: Consideration of impacts of overfishing of Aleutian Islands pollock and Gulf of Alaska Atka mackerel from the alternatives is not necessary because existing management structures are designed to prevent overfishing. Section 3.7 of the DEIS states “The BSAI Groundfish Fishery Management Plan is designed to prevent any negative effects to groundfish stocks. Total harvest is managed to prevent exceeding the ABC; therefore, none of the alternatives are expected to impact stock status.” Consideration of the impacts of overfishing can be found in the Alaska Groundfish Harvest Specifications EIS, which is incorporated by reference in Chapter 3.

CH3-7 Comment: The DEIS describes predicted impacts of the alternatives to the groundfish stock biomass for each of the major fisheries in the aggregate, but offers little or no discussion of expected impacts at the local level. In terms of changes to groundfish stock biomass distribution, NMFS only provides a description of the stock’s past, current, and future allocation of fishery effort to the three statistical areas in terms of ABC. It does not characterize the local distributions, density, and movements of fish stock biomass within these statistical areas, or how the stock biomass could shift spatially or temporally in response to the proposed fishing activity.

Response: Fine scale spatial and temporal information on target species abundance is not available to make quantitative estimates of effects of the alternatives. Harvest specifications are used to manage the fisheries to the spatial level that information is available. Finer spatial information is not used in the analysis of the impacts of the alternatives on target species as that analysis depends on the management of the fisheries under the harvest specifications, which are not applied at the local level. Section 3.7 discusses the potential impacts of relocation of effort into remaining open areas, which may cause localized depletion in certain areas. However the intensity of the spatial relocation of fishing effort is unknown. Also in Section 3.7, temporal effects in target fisheries were discussed in relation to season changes. These changes are not expected to impact overall stock health.

CH3-8 Comment: NMFS must perform a more rigorous analysis of the effects of fishing using the multi-species model.

Response: Section 3.1 and Section 7.5.1 discuss the use of multispecies models for target species stock management and for modeling predator/prey interactions, respectively. The discussion in Section 7.5.1 includes the limitations of using such models. Section 7.7 discusses the modeling of Atka mackerel and Pacific cod interaction in the Aleutian Island. In particular, the uncertainty range in the current model estimates precludes using these models to draw reasonable inferences on the direction and strength of the interactions. Development of a broad multispecies model for the purposes of understanding effects on Steller sea lions from management of groundfish fisheries would take significant development of the information, skills, and dedication of resources that are not currently available to complete such a task.

The DEIS includes an analysis of the potential effects of fishing on the human environment using the best scientific information available, acknowledging that multispecies modeling would provide more information with potentially less certainty.

CH3-9 Comment: The District Court's Summary Judgment Order identified the use of single species versus multispecies modeling as an area of controversy requiring an EIS. The DEIS also acknowledges the choice of modeling as an area of controversy. However, NMFS does not actually address the scientific differences of opinion surrounding the two models as ordered by the court. Instead, it uses multi-species models to analyze the interactions between groundfish, Steller sea lions, and fisheries. It does not discuss why other single species models are inappropriate for analysis as required by the District Court. The agency must do so to comply with the court's order.

Response: NMFS agrees that the U.S. District Court identified the use of single species versus multi-species modeling as an area of controversy, and that the Court required NMFS to prepare an EIS. Differences in single and multi-species models and how they are used by NMFS for the analysis of the effects of the alternatives are discussed in Section 3.1 of the DEIS.

CH3-10 Comment: NMFS does not explicitly refer to National Standard 3, and makes only a cursory mention of managing Atka mackerel as a unit in Area 541. NMFS must analyze the proposed action, not only in Area 541, but also including its effects in Areas 543 and 542, to ensure consistency with NEPA's requirement to address possible conflicts with the Magnuson-Stevens Act.

Response: National Standard 3 states that an individual stock of fish shall be managed as a unit throughout its range to the extent practicable, and interrelated stocks shall be managed as a unit or in close coordination (16 U.S.C. 1851(a)(3)). Chapter 3 describes the management of BSAI Atka mackerel and indicates that Atka mackerel in Area 541 is managed with Atka mackerel in the Bering Sea subarea. The impacts of the alternatives on Atka mackerel are addressed in terms of Areas 541, 542, and 543 in Section 3.2.7 and are not limited to only Area 541.

CH3-11 Comment: The EIS should discuss how the protection measures under the interim final rule shifted Atka mackerel fishing to Petrel Bank in Area 542 where the fish are same size as Steller sea lion prey from scat data.

Response: This issue is addressed in Section 3.2.6. Further redeployment effects are discussed in Chapter 8.

CH3-12 Comment: Ormseth et al. (2008) was not cited or included in the 2010 FMP biop but should be included in the EIS.

Response: NMFS will add a discussion on the differences between Aleutian Islands and Bering Sea Pacific cod stocks to Chapter 3 of the final EIS with references to (Ormseth et al. 2008). Information from Ormseth et al. (2008) is applied to the harvest specifications process for Pacific cod. This revision will provide further information on the Pacific cod stocks, but does not change the method of analysis of the effects of the Pacific cod fisheries under the alternatives. This method applies fisheries management under each alternative with the harvest specifications process that establishes catch limits based on stock assessment science and the Council process, which would include the Pacific cod split between the subareas.

CH3-13 Comment: The Aleutian Islands directed pollock fishery has been closed since 1998; however, the biomass in 2011 is at the same level as in 1998 due to variability in recruitment.

Response: NMFS acknowledges this comment. This issue was addressed in Section 3.4.1 and Table 3-11.

CH3-14 Comment: Fishing depths for pollock are deeper than other Steller sea lion prey species in the Aleutian Islands and deeper in the Aleutian Islands than in other areas.

Response: NMFS acknowledges this comment. This issue was addressed in Section 3.4.3 on page 3-44.

CH3-15 Comment: The EIS should include an examination of the fisheries and fishery closures in the Russia zone and the relationship (or lack thereof) with Steller sea lion population demographics. This should include information on fisheries and Steller sea lion population trends in areas such as the Sea of Okhotsk and the Commander Islands.

Response: Reliable catch information regarding the Russian fisheries is not available. Fishery closures in Russian waters include a 30 nm closures at the Commander Islands (30 nm) and no transit zones of 12 nm, established in late 1950s for northern fur seal and Steller sea lion conservation, before fisheries occurred. It is not clear if these closures are well enforced. Illegal fishing has been observed and the scale of illegal fishing is unknown. The information for the Russian fisheries is not sufficient to allow inferences as to the potential effects of the alternatives on Steller sea lion in the WDPS. The demographics of Steller sea lions in Russia is described in Section 5.1.1.2 and information on potential cumulative effects of Russian fisheries on Steller sea lions is in Section 5.3.8.

CH3-16 Comment: The EIS should include a summary (table or text) that clearly illustrates the timing of fishing activities throughout the year.

Response: Figure 3-4 and Figure 3-8 show the timing of fishing activities for Atka mackerel and Pacific cod throughout the year. This information is not provided for pollock due to very limited catch information due to very limited harvest activity in the Aleutian Islands.

Chapter 5 Comments

These comments are on Chapter 5, the background information on the status of Steller sea lions, including natural and human caused threats, analysis of the effects of the alternatives on Steller sea lion, and uncertainty and information gaps on the potential effects of the fisheries on Steller sea lions. Comments received on Chapter 5 covered a wide range of issues related to Steller sea lion biology and understanding potential fisheries interaction. These topics include Steller sea lion foraging behavior and prey, population trends, natality, nutritional stress, overlap between fisheries and Steller sea lions, population level effects analysis, and uncertainty or lack of information regarding Steller sea lions and potential fisheries effects.

Forage Ratios

CH5-1 Comment: The commenter questions NMFS's decision to "abandon" the use of the forage ratio analysis (forage analysis) used in the draft 2010 FMP biop as an analytical tool in the DEIS. The commenter questions whether this decision was because it did not support conclusions in the final 2010 FMP biop. The commenter suggests that NMFS should reconsider the use of a forage ratio analysis given comments made by CIE reviewers of the 2010 FMP biop, the fact that available information suggests that there is a high ratio of biomass to estimated dietary needs in the Aleutian Islands (Fadely et al. 2010), and that these ratios are higher in the Aleutian Islands than in the Gulf of Alaska (GOA) and Bering Sea where Steller sea lions do not appear to be showing nutritional stress.

Response: NMFS did not "abandon" the forage ratio analysis in the 2010 FMP biop, and its use was explored in Section 5.1.7.4 in the 2010 FMP biop. The information provided from the forage ratio analysis has limitations as described in Section 5.2.2.1.9 of the DEIS, which includes a discussion of forage ratios and summarizes the discussion of these issues from the 2010 FMP biop and the best scientific information available on this topic. NMFS agrees that the analysis of forage ratios on a large ecosystem scale shows lower forage available in areas where Steller sea lion populations are increasing, and higher forage ratios in some areas where populations are decreasing. However, the scale of the forage ratios was too coarse to determine whether the fisheries reduced prey availability on a spatial and temporal scale relevant for a foraging sea lion. There are additional limitations with the forage ratios including: the large amount of uncertainty in biomass estimates and the forage needs, the amount of prey required for efficient foraging is unknown, and the model assumption that all prey biomass is available to sea lions. The latter is highly unlikely as Steller sea lions do not consume all size classes equally, nor forage in all areas where the biomass may be present. Thus, when examining the results of forage ratio analyses, it is important to consider the scale of the available data and not draw conclusions on a finer spatial or temporal scale than the data allow. The DEIS and the 2010 FMP biop address this issue in the context of informing the analysis, providing the public with the best scientific information available to consider.

CH5-2 Comment: The forage ratios in critical habitat, the 2010 trawl survey, and the Atka mackerel tagging studies do not support a finding of adverse modification of critical habitat for the entire WDPS of Steller sea lions.

Response: NMFS received this comment during the EIS scoping period and assumes that it refers to the ongoing action analyzed in the 2010 FMP biop. NMFS did not have data on the biomass of Steller sea lion prey species inside critical habitat for the 2010 FMP biop (required to calculate a forage ratio in critical habitat). NMFS does not have that information now, nor does NMFS expect to have that information in the near term. The trawl surveys provide a broader scale of species abundance that does not necessarily provide the information needed to determine prey availability at finer scales that may be necessary for Steller sea lions within critical habitat. The analysis of the effects of the alternatives on Steller sea lions is based on the methods used in Section 5.2.2, which use fishery catch information and

Steller sea lion critical habitat. NMFS considered the results of the Atka mackerel tagging studies in the 2010 FMP biop when it determined that it could not insure that the groundfish fisheries were not likely to adversely modify designated critical habitat. In the DEIS, NMFS reviewed the available information on forage ratios, trawl survey results (including the 2010 survey), and the Atka mackerel tagging studies along with other information, as discussed in Sections 3.2 and 5.2.2.1.9.

CH5-3 Comment: In the DEIS, NMFS criticized the forage ratios (p. 5-105), stating that: “the scale of the forage ratios was too coarse” where the forage ratios were calculated by management area in the Aleutian Islands (541, 542, and 543) and critical habitat in the Aleutian Islands, eastern Bering Sea, and GOA. The forage ratios were proposed by NMFS in the draft 2010 FMP biop as a rationale for restrictive management measures as the ratios suggested insufficient forage in the Aleutian Islands. However, the ratios were miscalculated in the draft 2010 FMP biop, and the revised ratios in the final 2010 FMP biop found the forage ratio in critical habitat in the Aleutian Islands was the highest of all areas (eastern Bering Sea critical habitat and GOA critical habitat) and higher than all other areas of critical habitat combined. The highest forage ratio in the Aleutian Islands is found in the western Aleutian Islands. With the revision of the forage ratios, the ratios no longer supported the “belief” by NMFS that the Aleutian Islands was a low production area. Since the revised forage ratios no longer supported increased management measures, NMFS in the DEIS now disparages the forage ratios (and NMFS’s own methodology). In contrast, NMFS cites (Zeppelin et al. 2004)—whose scale for fishery lengths and prey size is the combined eastern Bering Sea and GOA, which is considerably far coarser than the scale used in the forage ratios. Apparently, NMFS’s views on appropriateness of scale are not consistent and “may” depend on the study providing the desired outcome to support the NMFS theory.

Response: In Section 5.2.2.1.9 of the DEIS, NMFS discusses the limitations with the forage ratio analysis, providing the public with an understanding of how the results of this analysis should and should not be used. The scale of an analysis will depend on the data available for the analysis and is not designed for a particular outcome as much as to address a particular question. The question to be answered will dictate the scale of the study.

Foraging

CH5-4 Comment: For each alternative, provide an explanation of how changes in foraging efficiency could affect overall Steller sea lion vital rates at the rookery cluster area and statistical area levels.

Response: The data available for analysis of effects of the alternatives does not allow determining foraging efficiency at a rookery cluster area level or statistical area level. Foraging efficiency would depend on where, when, what, and how much prey is available to Steller sea lions and their potential competition with fisheries for these prey resources in space and time. Limited information regarding Steller sea lion prey biomass is available. For instance, statistical areas 541, 542, and 543 are used in the analysis for Atka mackerel in Section 3.2 due to the management of this target species at the statistical area level. Pacific cod and pollock are not managed at the statistical area level and therefore biomass information for these species discussed in Sections 3.3 and 3.4, respectively, is not available at the statistical area spatial scale. Foraging efficiency analysis would require a good understanding of the foraging needs of Steller sea lions in relation to the forage available on the spatial scale in question. Currently, information is not available to understand foraging efficiency at either the rookery cluster or statistical area level for Atka mackerel, Pacific cod, or pollock. This information was not used in the methods to analyze the effects of the alternatives on Steller sea lion prey as described in Section 5.2.2 which used critical habitat and fishery catch information. It is not possible to predict Steller sea lion vital rates based on foraging efficiency under the alternatives at these spatial scales.

CH5-5 Comment: Understanding Steller sea lion preferred foraging habitat is one of the key questions in evaluating the potential effectiveness of proposed Steller sea lion protection measures. To date there have been few studies using satellite telemetry for Steller sea lions in the western and central Aleutian Islands. The DEIS includes limited juvenile and adult female foraging data. It is currently unknown whether adult females in the Aleutian Islands portion of the sea lion's range are nutritionally stressed and exhibiting lower than expected fecundity or natality. Further satellite linked time depth recorder studies on adult females at these breeding sites could help determine whether proposed protection measures are consistent with foraging habitat preferences.

Response: NMFS agrees that available telemetry data do not show conclusively whether adult females are nutritionally stressed. However, the best scientific information available to NMFS is provided in this EIS to inform the decision makers on an alternative that meets the purpose and need. Telemetry data are discussed in Section 5.1.1.4.3 of the DEIS. NMFS agrees that there are limited telemetry data for Steller sea lions and is scheduled in fall 2013 to tag more adult females in the Aleutian Islands to collect additional information.

CH5-6 Comment: The EIS should address new and emerging technologies for Steller sea lion surveys throughout the WDPS range (e.g., unmanned aerial survey technologies), and facilitate the permitting process for these emerging technologies.

Response: Section 5.1.1.6 provides a description of the best scientific information available on determining at-sea habitat used by Steller sea lions, including the latest technologies used to gather information on animal behavior. Permitting for research on Steller sea lions is addressed in Section 11.2.

CH5-7 Comment: Provide an expanded discussion of the limitations of datasets of platform of opportunity (POP) observations used in Himes Boor and Small (2012) including a list of areas with few to no POP sightings (holes in the data) and areas with few POP sightings since 2000 or largely dated observations (pre 1990). The EIS should include latitude and longitude of the POP sightings in the Aleutian Islands to determine depth and identification of type of vessel reporting the sightings (within the confines of confidentiality).

Response: Section 5.1.1.6 of the DEIS contains a discussion of Steller sea lion habitat use and POP data related to Steller sea lions, including the limitations of POP data to understand the areas used by Steller sea lions. The POP data provides limited information on the locations of marine mammals during observed fishing activities. The analytical method in Section 5.2.2.2 uses designated critical habitat as a measure of locations important to Steller sea lion foraging and where fisheries overlap may occur, rather than depending on observed occurrences of Steller sea lions during fishing as provided by the POP data. For these reasons the POP data is not used in the method to analyze the effects of the alternatives in Section 5.2.2.2.

CH5-8 Comment: Opening the "Seguam smile" would only open 3 percent of Area 541 critical habitat to the Atka mackerel fishery. In discussing the impacts, the DEIS states on page 5-121: "Opening this portion of critical habitat from 12–20 nm southeast of Seguam Island, increases the potential for prey availability effects compared to Alternative 1. This portion of critical habitat is near two rookeries and 5 haulouts. Areas of relatively high Steller sea lion encounter rates (based on sightings data from the Platform of Opportunities Database) occur during breeding and non-breeding seasons (Himes Boor and Small 2012) within the area that is proposed to be opened to Atka mackerel fishing. Therefore, increased potential for prey availability effects from this fishery occurs throughout the year."

This quote from Himes Boor and Small (2012) mis-characterizes the data from the POP database. A figure provided in public comment with POP data shows sightings on the northeast edge of the Amlia flat, but none in the “Seguam smile.”

Response: NMFS disagrees. NMFS reviewed the POP data in response to this comment and verified that there are several confirmed sightings of Steller sea lions in the 12 nm to 20 nm portion of critical habitat around Seguam Island that would be open to Atka mackerel fishing under Alternatives 2, 3, and 5. Figures 7 and 8 in Himes Boor and Small (2012), show high use of critical habitat inside the area 12 nm to 20 nm from Seguam Island by Steller sea lions.

CH5-9 Comment: The recent telemetry data from the five adult females needs to be analyzed in detail to compare locations with the underlying bathymetry, as well as compare dive depths with that bathymetry, including limited portion of Area 543 proposed as open to the Pacific cod trawl fishery under Alternative 2. The commenter attached several figures showing the overlap between bathymetry, Pacific cod trawl fishing, fishery closures, POP data sightings, and telemetry results for Steller sea lions. (The commenter excerpted data from the DEIS Figure 5-16 and used recent adult female telemetry results from the Alaska Fisheries Science Center to create figures that show there is no use of the Pacific cod trawl grounds by the telemetered Steller sea lions and no use of dense Pacific cod aggregations by these female Steller sea lions in the Pacific cod A season.) While the sample size of tagged adult female Steller sea lions is small, the results are consistent with other data showing very little reliance on the mid-shelf as a foraging area for Steller sea lions, particularly in the Aleutian Islands.

Response: Section 5.1.1.6 of the DEIS includes a discussion of data from the five female adult Steller sea lions tagged in the fall of 2012 (Figure 5-16). This section also includes a discussion of the limitations of the data and cautions drawing conclusions due to limited information for different age-sex groups. The final EIS will be updated in Section 5.1.1.6 to include the results of the analysis of the at-sea distribution of Steller sea lions in the western and central Aleutian Islands based on telemetry information collected from 2000 to 2013 (Lander et al. 2013). This analysis found seasonal and age differences inside and outside critical habitat, including many locations greater than 10 nm (inside and outside of critical habitat) from terrestrial sites used by adult females in winter. All winter locations of sea lions less than 1 year old (not representative of all juveniles) occurred within critical habitat. Overall the analysis does not change NMFS’s understanding of movement of Steller sea lions. Section 5.2.2.2 of the DEIS describes the method and assumptions used in the DEIS to analyze the effects of the alternative on Steller sea lion prey availability and allows an analysis of the alternatives that permits the comparison of effects, using critical habitat as the location of likely importance to Steller sea lion foraging rather than trying to use very limited telemetry data to characterize the potential overlap of fisheries in time and space with Steller sea lions.

Harvest of prey

CH5-10 Comment: The discussion in the EIS should include: a) the available prey field (and seasonality) in the Commander Islands with a comparison to the prey field found in the Aleutian Islands; b) overall comparison of the Steller sea lion demographics in the Commander Islands to the Aleutian Islands; c) comparison of killer whale populations in each area and observed predation on Steller sea lions; and d) comparison of Steller sea lion movement information in the two areas. The EIS should include a discussion to determine if the Steller sea lions in the western Aleutian Islands are migrating and dispersing to the same extent as Steller sea lions at Medny Island and if the western Aleutian Islands rookeries are experiencing the same lack of immigrants from other rookeries as is occurring at Medny Island (and if so, the potential causation).

Response: The DEIS included the best scientific information available on the Commander Islands that would inform the analysis of the effects of the alternatives on Steller sea lions. Information on prey fields and seasonality of prey fields in the Commander Islands is not available. The demographics of Steller sea lions in the Commander Islands are described in section 5.1.1.2 along with the U.S. Steller sea lion demographics. Killer whale predation in the United States and Russia is discussed in section 5.1.1.9. Movements of Steller sea lions between Russia and the United States are discussed in Section 5.1.1.4.3.

CH5-11 Comment: The area with some of the highest Steller sea lion population increases in Russian waters includes the Sea of Okhotsk, which also happens to have one of the world's largest commercial fisheries including a large pollock fishery (second only to the U.S. Bering Sea pollock fishery). Section 5.3.8 should include information about the fisheries of the Sea of Okhotsk and what restrictions are in place in those waters to protect Steller sea lions and provide foraging areas around rookeries and haul-outs.

Response: See response to Comment CH3-15 and Section 5.3.8 regarding the potential cumulative effects of Russian fisheries on Steller sea lions. Fisheries and Steller sea lion information from the Sea of Okhotsk is not included in the discussion in Section 5.3.8 for two reasons. The first reason is that the Russian fisheries information is not reliable; and therefore, cannot be compared to U.S. fisheries information. The second reason is that the Sea of Okhotsk is a very different marine environment from the Aleutian Islands. The Sea of Okhotsk is surrounded by islands and continental land mass and has broad shelves. The Aleutian Islands is characterized by an island chain with a very narrow shelf edge compared to the Sea of Okhotsk. For these reasons, information on fisheries and Steller sea lions in the Sea of Okhotsk does not provide a good comparison to the fisheries and Steller sea lions in the Aleutian Islands and is not within the scope of the analysis.

CH5-12 Comment: Competition should be evaluated on a local basis, including harvest rates by sub-area.

Response: In Chapter 5 the harvests of Atka mackerel and Pacific cod described in Chapter 3 were used to understand the potential effects on Steller sea lion prey resources near haulouts and rookeries to the finest scale possible given the data available to NMFS. NMFS does not have data on local harvest rates in relation to available local biomass. NMFS does not have biomass data at local levels because that data are not used in the methods used to determine biomass for groundfish stock assessments and has not been collected. Limited local area biomass has been determined for Atka mackerel and Pacific cod tagging studies and pollock cooperative acoustic survey studies, respectively, as described in Sections 3.2.5, 3.4.3, and 11.1.1.3. These studies provided biomass estimates at the location and time when the studies were conducted but are limited by resources available to continue such studies so that updated answers on available biomass at the local level and harvest rates in relation to available local biomass are not available.

CH5-13 Comment: Harvest rates of Atka mackerel are too low and the fraction of Pacific cod in these areas too small for a fishery on these species to result in nutritional stress.

Response: Section 5.2.2.1 discusses the factors that may lead to competition between fisheries and Steller sea lions for Atka mackerel and Pacific cod. These factors include more than just harvest rates and fraction of prey abundance in an area. Nutritional stress may occur if fisheries and Steller sea lions are dependent on the same prey resources in time and/or space on statistical area and local scales.

CH5-14 Comment: The 2010 FMP biop gives little consideration to studies that examined the relationship between fishing and Steller sea lions, such as Calkins (2008) and Trites et al. (2010). Bernard et al. (2011) found that since 2000 the results of the studies are unequivocal as none of these

studies found statistically significant associations consistent with harm by fisheries. Moreover, studies conducted by the Fisheries Interaction Team (FIT) do not support persistent localized depletion due to fishing.

NMFS may not ignore the reputable scientific opinion of Dr. Calkins (Calkins (2008)), which was submitted to NMFS on April 6, 2008. NMFS acknowledges that this document is relevant and scientific uncertainty of the effects of fisheries on Steller sea lion prey resources exists. However, instead of analyzing the study, NMFS defers analysis of it to the forthcoming Section 7 consultation. Dr. Calkins concluded that there are no ecological reasons why low effort or efficient fishing should have any effect on sea lion population growth trends within the near future. His report supported the hypothesis that longline fishing and Steller sea lion population trends are largely independent of each other. The DEIS mentions this study only once, when discussing its consideration of the Bernard et al. (2011) review in preparation for future Section 7 consultation. NMFS acknowledges that Dr. Calkins's study reaches a contrary conclusion on the impact of fisheries on Steller sea lions, but provides no further description of Dr. Calkins's conclusions or their implications on its analysis. This lack of analysis contravenes NEPA, both by ignoring reputable scientific opinion, and by failing to weigh scientific considerations before taking a Federal action.

Response: Chapter 5 of the DEIS includes consideration of differing opinions on the potential effects of the fisheries on Steller sea lions. These studies are discussed in Sections 3.2.5 and 5.2.2.1.9 in the DEIS. NMFS is analyzing the methodology used in Bernard et al. (2011) for the statistical analysis of fisheries effects studies related to Steller sea lions. NMFS does not agree with the commenter's conclusion that FIT studies do not support persistent localized depletion due to fishing. Results of the available FIT studies suggest that some areas studied are more susceptible to localized depletion from fishing than other areas studied. For example, research conducted by the FIT and discussed in the DEIS concluded that fishing on Atka mackerel aggregations near Amchitka Island from 2002 through 2010 at fishery exploitation rates were likely to result in localized depletion of Atka mackerel though they were not likely to result in localized depletion at Seguam Pass, Tanaga Island, or Kiska Island.

NMFS considered Calkins (2008), as well as other scientific opinions on interactions between fisheries and endangered Steller sea lions (see Section 5.2.2.1.9). Furthermore, NMFS provides the background information on the differing views on the factors that may inform the potential effects of fisheries on Steller sea lions in Section 5.2.2.1, including Steller sea lion diet, prey size, depth, time, and space of foraging and fisheries, predator behavior, and how these factors may contribute to nutritional stress. Also, an explanation of the analytical method used to analyze the effects of the alternatives on endangered Steller sea lion prey availability is found in Section 5.2.2.2.

CH5-15 Comment: Steller sea lions "out-compete" fisheries for prey by feeding mostly on recruit and pre-recruit Atka mackerel and Pacific cod while fisheries largely catch older fish.

Response: Prey size is discussed in Section 5.2.2.1.2 in the DEIS. Considerable overlap exists in the size of Atka mackerel and Pacific cod eaten by Steller sea lions and the size of Atka mackerel and Pacific cod taken in the fisheries, as well as other factors that may lead to competition between Steller sea lions and fisheries (See Section 5.2.2.1).

CH5-16 Comment: Fisheries effects on Steller sea lion prey, including overlap, was identified as an area of controversy in the DEIS. However, Section 5.2 of the DEIS provides little information or a balanced examination of this issue. By failing to meaningfully incorporate the reviews of the 2010 FMP biop in the DEIS, the DEIS does not inform and provide the reader with an understanding of the controversy. Merely stating a controversy exists does not address NEPA's requirements nor the court's direction to

take a “hard look” at the significant issues related to the impacts of a proposed action *in advance* of a decision on a proposed action.

Response: Conflicting points of views on fisheries interaction with Steller sea lions are discussed in Section 5.2.2.1 (including reviews of the 2010 FMP biop). The action analyzed in the DEIS is a suite of measures designed to protect Steller sea lions from effects of fishery removals of important sea lion prey species. Thus, NMFS incorporated information from the 2010 FMP biop into the DEIS to evaluate how the alternatives may protect Steller sea lions from potential adverse impacts of prey removal. NMFS outlined the areas of controversy in the DEIS to inform decision makers about the controversy of the findings of the 2010 FMP biop. NMFS incorporated the best scientific information available into the DEIS and will continue to evaluate new information as it becomes available, to determine if the information affects the analysis in the DEIS. NMFS will include the best scientific information available in the final EIS, including information on the controversial topics identified in the DEIS, prior to issuing a decision on the proposed action.

CH5-17 Comment: Section 5.2.2.1.4 “Rate of Fisheries in Time and Space” states that trawl fisheries had the highest proportion of their catch in cells with high catch rates. However, a comparison of weekly A season catch amounts between trawl and non-trawl gear, shows similar total removals per week by both gear types. As the section concludes “we cannot determine the relationship between these catch rates and the impacts on prey except that higher catch rates in relation to low prey abundance would be more likely to result in localized depletions.” As long as “higher catch rates” by trawl gear are occurring where there is “high prey abundance” that concern should be mitigated, especially if those areas used by the trawl fishery are partitioned from the areas used extensively by Steller sea lions.

Response: Section 5.2.2.1.4 refers to Figure 4.31 in the 2010 FMP biop, which is based on fisheries data from 2000. Since 2000, the management of the hook-and-line fisheries has shifted the concentration of fishing from the early part of the year to spread out through the year as shown in Figure 3-8 of Section 3.3.3. The text in Section 5.2.2.1.4 will be updated in the final EIS to refer to more recent information on fishing practices by Pacific cod trawl and non-trawl vessels as described in Section 3.3.3. Trawl fisheries continue to be concentrated in the early part of the year, while non-trawl harvests are distributed between the A and B seasons (hook-and-line and pot gears) reducing potential concentration of harvest in time by non-trawl gear. NMFS agrees that high prey abundance and fishing in areas not used by Steller sea lions reduces the potential for localized depletion by trawl fisheries.

CH5-18 Comment: For each of the proposed management alternatives, provide a full account of how the changes to groundfish stocks could potentially compromise or otherwise alter the quality of the Steller sea lion prey field and affect individual foraging efficiency of Steller sea lions, particularly for juveniles and adult females.

Response: The alternatives’ effects on target groundfish species stocks is discussed in Chapter 3 of the DEIS. The effects of the alternatives on groundfish stock are very similar so that the effects on the stocks do not provide information that could show changes to the Steller sea lion prey field or effects on individual foraging efficiency for different life stages. The analysis of the harvest management of the groundfish on the target stocks under all of the alternatives is on a scale at the statistical area or at the Aleutian Islands subarea level. The analysis in Chapter 5, based on the catch data in Chapter 3, provides a better description of the effects of the alternatives on Steller sea lions prey resources, including smaller spatial scale analysis of catch in relation to Steller sea lion critical habitat.

CH5-19 Comment: Section 5.2.2.1.2, “Prey Size,” lacks any quantitative evaluation of the sizes of prey taken by the fishery in the Aleutian Islands. There is detailed data on sizes of Pacific cod, Atka mackerel, and pollock taken in Aleutian Islands fisheries available from the NMFS observer database that could be

used to evaluate partitioning based on size. This is particularly relevant to the Aleutian Islands trawl fishery for Pacific cod, which takes significantly larger sizes of Pacific cod than the sizes taken by Steller sea lions.

Response: Prey size is discussed in Section 5.2.2.1.2 to the extent that it informs the analysis of the effects of the alternatives on Steller sea lions. Issues with using available data to determine size of prey are discussed in this section. Because of the issues with prey size data and how representative it is or is not to Steller sea lion prey needs, NMFS has not done a quantitative analysis of prey size data to inform the analysis of the effects of the alternatives on Steller sea lion prey.

CH5-20 Comment: The EIS should reevaluate the rationale for seasonality of fishing restrictions, and reevaluate whether changes to existing fishing seasons may be warranted.

Response: The DEIS discussed seasonality of several issues related to Steller sea lions, including frequency of occurrence for prey (section 5.2.2.1.1), prey size (section 5.2.2.1.2), foraging behavior (section 5.2.2.1.3), fishing rates in time (section 5.2.2.1.4), and effects of the alternatives on prey availability. This analysis focused on the effects of the alternatives taking into consideration seasonality of Steller sea lion behavior and fishery management rather than evaluating whether current fishing seasons should be changed. Only a small seasonal adjustment was considered in the alternatives for Atka mackerel and Pacific cod, with Alternatives 2, 3, 4, and 5 changing the end date for the year from November 1 to December 31 for trawl and Alternative 2 shortening the Pacific cod non-trawl fishery season from December 31 to November 1. That change in seasonal apportionment of catch is addressed in Section 5.2.2. NMFS did not undertake an analysis that would consider changes in seasonal catch outside of the alternatives presented.

CH5-21 Comment: Section 7.7 acknowledges that not only are the Pacific cod in the Aleutian Islands larger than the eastern Bering Sea, the largest Pacific cod are found in the western and Central Aleutian Islands (p. 7-23): “As shown in Figure 7-13, larger Pacific cod (fork lengths greater than or equal to 80 cm) tend to be more numerous in the western Aleutian Islands (Areas 542 through 543), while smaller Pacific cod are more numerous in the east (Area 541).” (Aydin 2010).

However, this reference is found in the DEIS only in Chapter 7 (Ecosystem) and is not included in Chapter 5 in the section on potential competition with fisheries. The DEIS (p. 7-23) also notes that: “Decreasing fishing on Pacific cod would have little or no, or even potentially deleterious, impacts on increasing prey supply to Steller sea lions.” This conclusion (from multi-species ecosystem modeling in Chapter 7) should also be considered in the discussion of the potential competition between fisheries and Steller sea lions in Chapter 5.

Response: NMFS did consider the conclusion from the multi-species ecosystem modeling in Chapter 7. Pacific cod predation on Atka mackerel and how this is considered in the analysis of the alternatives on prey availability for Steller sea lions are in Section 5.2.2.2. Because Pacific cod predation on Atka mackerel is part of the natural mortality incorporated into the Atka mackerel stock assessment, the changes in harvest of Pacific cod and any change in predation on Atka mackerel is not further considered in the analysis of the effects of the fisheries on prey availability for Steller sea lions (see response to comment CH2-17 for more information on natural mortality). Section 5.1.1.10 will be revised in the final EIS to refer to Aydin (2010) in Chapter 7 regarding the potential competition between Steller sea lions and large Pacific cod for Atka mackerel prey.

CH5-22 Comment: The DEIS does not give a “hard look” at the effects, if any, of Pacific cod hook-and-line fishing, missing the objective to spatially and temporally disperse fishing. The 2010 FMP biop RPA, and, subsequently, the DEIS, incorrectly makes the unsupported assumption that there is a negative

association between Pacific cod hook-and-line fishing and Steller sea lion population trends. However, the conclusions of Calkins (2008) for hook-and-line gear and (Loughlin and Merrick 1989); (Ferrero and Fritz 1994); (Sampson 1995); (Dillingham, Skalski, and Ryding 2006); and (Hennen 2006) for fishing by all gear types and species contradict this assumption. Such analyses were dismissed in Section 5.2.2.1.4 in the draft EIS and in the 2010 FMP biop. The hook-and-line fishery is less likely than trawl gear to result in adverse modification to critical habitat compared to other gear types as described in the 2001 biological opinion and Calkins (2008). The DEIS should analyze the different effects of fishing by gear type on the prey field and WDPS of Steller sea lions similar to the 2001 biological opinion and informed by Calkins (2008).

Response: Section 5.2.2.1.4 acknowledges that Pacific cod hook-and-line fishing has less potential for localized depletion than trawl fishing. Rates of fishing in time and space are discussed in Section 5.2.2.1.4 and include the recognition that hook-and-line gear has the lowest catch rates compared to other gear types. Section 5.2.2.1.9 discusses the conflicting information related to fisheries effects on Steller sea lions and the 2010 FMP biop findings, including the references cited in the comment. The DEIS analyzes the effects of fishing on Steller sea lions by looking at the harvest of Pacific cod by trawl and non-trawl gear, including hook-and-line gear. The analysis of the alternatives allows the decision makers to understand the effects of the non-trawl fisheries on Steller sea lions and to tell the difference between effects from trawl and non-trawl fisheries.

CH5-23 Comment: NMFS fails to articulate a rational reason for its inclusion of Pacific cod restrictions in its alternatives. The case for Pacific cod as an important prey species for Steller sea lions is tenuous at best. The inclusion of Pacific cod in the alternatives is based on the presence of this species in the Steller sea lion diet using evidence from scat samples. NMFS' most recent study detailing the frequency of occurrence (FO) of various prey in the Steller sea lion diet shows that Atka mackerel is the highest ranking prey, with a 93% FO in the summer in the Western and Central Aleutian Islands. This finding makes NMFS's decision to continue restricting Pacific cod fisheries in this area, especially in the summer months, inconsistent with the record evidence before the agency. For example, in summer in the central and western Aleutian Islands, Pacific cod occurs at only 16% FO. Further, NMFS does not have data establishing that the Pacific cod fisheries compete with the Steller sea lions for prey. It is therefore not rational to conclude that restricting Pacific cod fisheries in the summer months would benefit the Steller sea lion.

Response: The best available information on Steller sea lion diet in the western and central Aleutian Islands is provided in DEIS Table 5-19. Based on the exposure analysis in the 2010 FMP biop, NMFS uses a threshold of 10% FO at any time during the year to determine important Steller sea lion prey species. Pacific cod meet this threshold in winter (FO = 26.8%) in the western and central Aleutian Islands but not in summer (FO = 7.72%). Benefits to Steller sea lions from any restrictions to fishing for Pacific cod in summer months are assumed to accrue as a result of greater overall biomass of Pacific cod through reduced fishing mortality. Fishing restrictions for Pacific cod in winter in the western and central Aleutian Islands are likely to have the greatest benefit in terms of reducing the potential for localized competition between sea lions and fisheries and conserving the value of critical habitat for foraging Steller sea lions.

CH5-24 Comment: The EIS should include the latest information on movement of Atka mackerel in and out of trawl exclusion zones including the magnitude of movement (amount) and the proportion. The EIS should include the likelihood of localized depletion given the movement information and local exploitation rates.

Response: The results of the Atka mackerel tagging studies are discussed in Section 3.2.5 of the DEIS and are the latest information available regarding Atka mackerel occurrence and movement in the tagging

study areas of the Aleutian Islands. These studies looked at the efficacy of trawl exclusion zones by determining aggregations and movement of tagged Atka mackerel across the trawl exclusion zone boundaries. Based on the results, it appears that the Amchitka Island study area may be more likely to be affected by localized depletion than the other study areas. This information was used to inform the analysis of the effects of the alternatives on Steller sea lion Atka mackerel prey in Section 5.2.2.2.

Natality

CH5-25 Comment: The EIS should provide greater detail in the use of pup/non pup or pup/adult female ratios as a proxy for natality, and should review other methods to estimate natality in the WDPS of Steller sea lions. The issue of natality is central to understanding factors affecting Steller sea lion population trends and the effect of fishing, which in turn is central to understanding the effects of each of the alternatives presented in the DEIS. Chapter 5 needs to be revised to include this information to inform the analyses of alternatives. The EIS should evaluate whether the assumptions in the (Holmes et al. 2007) natality model are credible, and should reevaluate natality estimates with current Steller sea lion population dynamics data and should consider alternative estimates of natality since 2004 (e.g., (Maniscalco, Springer, and Parker 2010)), and other alternatives to reduced natality (e.g., (Horning and Mellish 2012)). Provide factors that may affect pup to non-pup ratios such as length of forage trips and use of non-pups or breeding females in denominator. In light of CIE review of the 2010 FMP biop, re-examine efficacy of using pup to non-pup ratios as a proxy for natality, including potential for inaccuracies and bias. Contrast and compare the more recent information to Holmes et al. (2007). Evaluate the validity of conclusions by Holmes in light of more recent studies, CIE and other peer reviews, and studies on pup surveys in the Central GOA.

Response: The DEIS included a discussion of pup and non-pup trends and natality in Section 5.1.1.4 based on the best scientific information available. A review of methods to estimate natality is beyond the scope of this EIS, but NMFS is continuing to look at the issues regarding the appropriate methods to estimate natality. The analysis of the effects of the alternatives in the DEIS focuses on potential effects on prey availability (Section 5.2.2.2) and does not further apply those effects to natality. (See response to Comment CH5-26). The information in the population dynamics section provided status information on Steller sea lions to understand the context for the potential effects of the alternatives.

CH5-26 Comment: Chapter 5 makes no reference to pup to non-pup ratios so one might infer that NMFS took the reviews of the 2010 FMP biop to heart. Use of non-pup to pup ratios in the 2010 FMP biop is a primary weakness for an assessment of population change and is problematic as a measure of reproductive output. It is not known if ratios are a reliable proxy for natality. However, while the DEIS does not include pup to non-pup ratios, NMFS has stated that the 2014 biological opinion will include an analysis of the “Evaluation of the reliability of pup: non-pup ratios as indices of sea lion reproductive rate” (DeMaster memo 5/24/2013, pp. 2 and 3). This analysis will be a simulation where NMFS is going to artificially hold all variables (other than natality) static to measure reproductive rate (p. 3)—an artificial construct that does not occur in nature.

Given the reviews of the 2010 FMP biop, this exercise appears to be unjustified. Nonetheless, if NMFS is going to use pup to non-pup ratios in the 2014 biological opinion as a yardstick or measure of the potential effects of the proposed action, then this analysis needs to be integrated into the DEIS. Given the number of analyses that are not included in the DEIS but will be in the future biological opinion, it is as if NMFS is preparing one analysis and metric for the public and Council to evaluate the alternatives (the EIS), while using a completely different analysis and metric for the 2014 biological opinion. This dual standard is not consistent with NEPA or the direction of the court.

Response: The 2010 FMP biop used ratios of sea lion pup counts to sea lion non-pup counts as a proxy for WDPS natality. Several of the external reviewers of the 2010 FMP biop questioned the validity of this ratio as a proxy for natality in the WDPS. NMFS agrees that the use of pup to non-pup ratios as a proxy for natality warrants investigation. NMFS plans to further investigate the use of pup to non-pup ratios as a proxy for natality. Chapter 5 of the DEIS presents the best scientific information available for WDPS reproductive rates and notes that few empirical data exist to directly infer birth rate in wild Steller sea lions, and no empirical data exist for the western and central Aleutian Islands. Section 5.1.1.4.2 discusses reproduction and Section 5.2.2.1.8 discusses nutritional stress and reduced natality as an indicator. Section 5.1.1.4.2 discusses that the extent to which reproductive rates are influencing the continued decline of western Aleutian Islands Steller sea lions is unknown.

CH5-27 Comment: Reduced natality during high juvenile survival seems unexpected. This implies inexperienced juveniles are foraging more successfully than adult females.

Response: Population dynamics of Steller sea lions are discussed in Section 5.1.1.4 of the DEIS. NMFS disagrees that the sole explanation for low natality and high juvenile survival, should it exist, is due to a difference in foraging success of adult females and juveniles. Section 5.1.1.4.2 of the DEIS describes factors that may affect natality in Steller sea lions and Section 5.1.1.4.1 describes factors that may affect survival.

Nutritional stress

CH5-28 Comment: The EIS should consider a different metric for performance standards other than modeled biomass projections that were contained in the 2010 FMP biop. NMFS must take into account that there is no scientific evidence to support nutritional stress from fishing. NMFS should incorporate the input of the Steller Sea Lion Mitigation Committee (SSLMC), which is the Council's committee that is currently working on development of protection measures for consideration by the Council.

Response: NMFS did not use modeled biomass projections for the analysis of effects of the alternatives on Steller sea lion prey in Chapter 5. Based on the 2010 FMP biop, which based its conclusions on more than just modeled biomass projections, NMFS maintains that the scientific evidence indicates that there is a potential for nutritional stress from fishing activities. In Section 5.2 of the DEIS, NMFS explains the controversy and uncertainty in understanding the potential for nutritional stress. NMFS worked closely with the Council and its SSLMC to consider the Council's recommendations on the EIS development, including development of the alternatives.

CH5-29 Comment: The EIS should discard the weight of evidence approach that resulted in the conclusion there was nutritional stress (and nutritional stress due to fishing) where the only purported evidence was reduced natality. Weight of evidence rests on speculation of what is possible rather than what is supported by scientific evidence. The EIS should re-examine the underlying basis of the hypothesized nutritional stress and reduced natality that was based on the modeling work in Holmes et al. (2007) in light of more recent information (e.g., Horning and Mellish (2012); Maniscalco, Springer, and Parker (2010); CGOA pup counts since 2005). There needs to be a critical and unbiased evaluation of the evidence. It was difficult to determine the weight-of-evidence method.

Response: The DEIS examines the best scientific information available regarding nutritional stress for Steller sea lions in Section 5.2.2.1.8. The DEIS presents the type of information available to discern potential effects of the alternatives on Steller sea lions and makes reasonable conclusions based on the available information. NMFS used information that informed the analysis of the effects of the alternatives, including Horning and Mellish (2012) on juvenile mortality and Maniscalco, Springer, and Parker (2010) on natality rates (see Chapter 5). Evidence consistent with the nutritional stress hypothesis

included continued declines in pup and non-pup counts discussed in Section 5.1.1.2 along with fishing for important Steller sea lion prey species in designated critical habitat discussed in Section 5.2.2, and an indicator that natality may be lower in the western and central Aleutian Islands than in other sub-regions. As well, Chapter 2 shows markedly less restrictive fishing measures before 2011 for Atka mackerel and Pacific cod in designated critical habitat west of 178° West longitude relative to measures to the east. This indicates that fisheries cannot be conclusively excluded as contributing to the continued declines of Steller sea lions in the western and central Aleutian Islands.

CH5-30 Comment: NMFS's cursory overview of the studies it intends to review for its Section 7 consultation invalidates the theory that fisheries cause nutritional stress to the WDPS of Steller sea lions. For example, the statistical tests included in the studies analyzed by Bernard et al. (2011) include 20 tests with negative effects, 26 tests with positive effects, and 373 non-significant results. NMFS acknowledges in Section 5.2.2.1.9 that "the overwhelming number of non-significant relationships calls into question the appropriateness of the underlying models, and also whether findings of significant effects (positive or negative) are spurious." If fisheries adversely affect sea lion numbers, statistically significant negative associations should be detectable between measures of fishing and measures of sea lion numbers. Studies after 2000 cited in the 2010 FMP biop and two studies cited in Bernard et al. (2011) did not have statistically significant associations consistent with harm by fisheries. The food driven nutritional stress hypothesis as an explanation for central and western Aleutian Islands Steller sea lion decline should be scientifically rejected.

Response: NMFS disagrees that the nutritional stress hypothesis should be rejected. As described in Section 5.2.2.1.9 of the DEIS, the nutritional stress hypothesis remains a working hypothesis for the continued decline of Steller sea lions in the western and central Aleutian Islands and the lack of robust recovery in the remainder of the WDPS as identified in the 2008 Steller Sea Lion Recovery Plan. The extent to which Steller sea lions in the western and central Aleutian Islands are experiencing nutritional stress as a result of environmental or fishery-related causes is unknown. NMFS is not as confident as Bernard et al. (2011) that a relationship between fishery removals of prey and Steller sea lion population trends can be determined with statistical precision with available data. The results of the Center for Independent Expert (CIE) reviews of the 2010 FMP biop do not support the conclusions of Bernard et al. (2011) about the influence of the existing fishery correlation analyses in resolving the nutritional stress hypothesis, although (Bowen 2012) and (Stokes 2012) criticize NMFS for not giving the fishery correlation analyses more thorough treatment in the 2010 FMP biop. However, at this time NMFS does not have information that conclusively invalidates the nutritional stress hypothesis.

CH5-31 Comment: Dr. Bowen found that the harvest rates for Atka mackerel are too low and the fraction of the Pacific cod stock in the Steller sea lion areas are too small for a fishery of these species to result in nutritional stress. Bernard et al. (2011) also determined that the nutritional stress hypothesis should be scientifically rejected. They found that forage ratios of groundfish to sea lions were higher in the western and central Aleutian Islands than in regions where sea lions are indisputably recovering. This indicates that the quantity of groundfish area-wide is sufficient to prevent sea lions from encountering nutritional stress. The report also analyzed the signs of fishery-driven nutritional stress included in the 2010 FMP biop. Of the eight general conditions consistent with fishery-driven nutritional stress, three—emaciation, reduced body size, and reduced survival—were not indicated. Four of the remaining conditions have not been analyzed since 2000, and the final condition—reduced reproduction—was contradictory. Failure to analyze these independent expert findings in the EIS violates NMFS's NEPA obligation to respond to credible and reputable scientific opinions.

Response: Section 5.2.2.1.9 describes the findings of the 2010 FMP biop on potential fisheries impacts and includes a discussion of the reviews of the 2010 FMP biop (including Bowen (2012) and Bernard et al. (2011)) as these reviews relate to the analysis in the DEIS. Issues discussed include further

evaluation of the methods used to determine fisheries effects on Steller sea lion populations and a discussion on forage ratios. Section 5.1.1.4.2 provides the best scientific information available regarding reproduction.

CH5-32 Comment: In the discussion in Section 5.2.2.1.8, NMFS acknowledges that of 14 indicators used in the 2010 FMP biop to evaluate potential biological manifestations of nutritional stress in Steller sea lions only one, reduced natality, was positively correlated to suggest an effect from nutritional stress. NMFS states that the lack of data that support any other indicators of nutritional stress has caused some stakeholders to believe that nutritional stress is not caused by the (then) highly regulated fisheries of the Aleutian Islands. It was exactly the conclusions that NMFS drew from the analysis of the 2010 FMP biop that led to the sharp criticisms leveled by the reviewers of the 2010 FMP biop that the science does not support the proposition that fishing at the 2010 levels caused nutritional stress and lower natality. This viewpoint, not just a bulleted list of performance standards, should have been disclosed and discussed in the alternatives analysis in the DEIS.

Response: See response to comments 5-29 and 5-30. Section 5.2.2.1.9 includes the findings of the 2010 FMP biop and the concerns raised by the reviewers and other stakeholders. This information provides the context for the analysis of the effects of the alternatives in Section 5.2.2.

CH5-33 Comment: Chapter 5 provides little discussion of the nutritional stress theory and does not disclose concerns with this theory from the 2010 FMP biop reviews. Section 5.2.2.1.8 presents the nutritional stress theory as probable and likely without scientific evidence that addresses the concerns with this theory expressed in the reviews of the 2010 FMP biop. Without any new supporting scientific evidence, the DEIS maintains that fishery induced nutritional stress “may” occur based on the 2010 FMP biop. Nutritional stress is an unproven theory that has been related to potential effects on Steller sea lion populations. There is little evidence that nutritional stress occurred in the past and virtually no evidence that Steller sea lions are currently experiencing nutritional stress from multiple studies. The evidence for fishery-induced nutritional stress is weak; effectively remains conjecture—the evidence suggests there is no more than a possibility of this occurring—this interpretation of likely is out of sync with that applied elsewhere for resource standards. The DEIS identifies nutritional stress and particularly “fishery induced nutritional stress” as an area of controversy. However, the DEIS provides little information on the nature of the controversy but does identify (p. 1-17) that Bernard et al. (2011) found “that the NMFS theory of nutritional stress from competition with fisheries was not well supported” and should be rejected, and the CIE also criticized the theory. The reviews of the 2010 FMP biop further found significant evidence to undercut the nutritional stress hypothesis. For example, Drs. Bowen, Stewart, and Stokes each concluded that the 2010 FMP biop unjustifiably relied heavily on pup/non-pup ratios as a proxy for natality, despite the fact that no evidence shows these ratios provide a reliable proxy. Dr. Stokes also found that the comparison of inferred natality rates in the western and eastern distinct population segments to support a theory of nutritional stress in the WDPS indicated no link between nutritional stress and natality because the inferred natality rates in the WDPS varied widely. NMFS has failed to provide scientific support for its nutritional stress theory and has ignored or misinterpreted studies to the contrary.

Response: Nutritional stress was addressed in Section 5.2.2.1.8. The DEIS presented various and conflicting views on nutritional stress and the potential responses of Steller sea lions to nutritional stress, including decreased natality. The DEIS acknowledges that the extent to which the WDPS is susceptible to nutritional stress today is unknown. The DEIS provides the public with the best scientific information available to inform the analysis of the alternatives and does not require the resolution of controversy regarding the information used, only the identification of controversy.

CH5-34 Comment: The DEIS assumes that fisheries compete with Steller sea lions in a manner that causes chronic nutritional stress and other adverse impacts and that more fishing, and more areas open to

fishing, result in greater negative effects on Steller sea lions. The DEIS fails to addressing the merits of this assumption in consideration of the strong criticisms levied in the reviews of the 2010 FMP biop. Whether such a significant, negative impact exists is relevant under NEPA. The reviewers of the 2010 FMP biop concluded that the case made for prey competition with fisheries resulting in nutritional stress was weak, and that it was not likely that fisheries were causing nutritional stress in Steller sea lions. By assuming that fishing is adversely competing with sea lions rather than objectively evaluating all available information, including new information that does not support the agency's previous ESA conclusion, the EIS does not meet the standard of rigorous and accurate scientific analysis.

Response: The 2010 FMP biop and subsequent information provide the best scientific information available, and NMFS used that information in developing the analysis in the EIS in Chapter 5. The DEIS meets the requirements of NEPA by describing the type of information available to understand the effects of fisheries on Steller sea lions and considering this information in the analysis of the effects of the alternatives. The DEIS discloses the potential impacts on Steller sea lions and their critical habitat, including nutritional stress in Section 5.2.2.1. Critical habitat is identified as an area important to Steller sea lions; therefore, an analysis of the amount of area open to harvests of prey species under the alternatives would allow the decision makers to understand the potential effects of the alternatives on Steller sea lions as described in Section 5.2.2.2. The DEIS also discloses the scientific uncertainty associated with understanding the impacts of fisheries on Steller sea lions and competition for prey in Section 5.2.2.1.

CH5-35 Comment: NMFS relies on the 2010 FMP biop to conclude that fisheries cause jeopardy to Steller sea lions, but it does not provide a rational explanation of how this data supports the interim final rule. The 2010 FMP biop identified reduced natality as the sole indicator to support its theory that chronic nutritional stress causes sea lion declines in the western Aleutian Islands subarea. It did so despite the fact that NMFS had no actual natality data from the region, and that 13 other indicators suggested that the WDPS of Steller sea lions are not nutritionally stressed. Indeed, the independent experts found that the 2010 FMP biop lacked evidence of nutritional stress and routinely "overstates conclusions based on weak evidence," and "transforms suggestion and possibility into fact."

Response: NMFS used information from the 2010 FMP biop to inform its analysis of the environmental consequences of the alternatives. However the information from the 2010 FMP biop is not the only information NMFS used to analyze the environmental consequences of the alternatives. Including the references cited throughout the DEIS, NMFS also used scientific information from journals, stock assessments, NMFS Catch Accounting System fishery catch data, AFSC Steller sea lion surveys and other biological information, and reviews of the 2010 FMP biop to inform the analysis in the DEIS. NMFS has provided the basis, based on the best scientific information available, for decision makers to compare the environmental consequences of the alternatives and select a preferred alternative (see Section 5.2 for the environmental consequences of the alternatives for Steller sea lions).

Other factors affecting Steller sea lions

CH5-36 Comment: The EIS should re-evaluate the threat assessment of killer whales to Steller sea lions in the Aleutian Islands, including Bigg's killer whales (transient killer whales). It should provide a greater synthesis of Bigg's killer whale population estimates and predation in the Aleutian Islands and the Commander Islands, and its potential contribution to Steller sea lion population declines and lack of robust recovery. Population estimates of killer whales should include both historic and current estimates for the Aleutian areas and the Commander Islands. The EIS should include the total population estimate of transient killer whales in Alaska (Eastern North Pacific stock: BSAI and GOA) and the proportion of that stock that is found in the Aleutian Islands. The EIS should provide an estimate of what portion of transient killer whale diet is composed of Steller sea lions as well as an estimate of the energetic resting

discount. The EIS should also include estimates of the amount of predation (and number of killer whales) that could potentially trigger proportional changes in Steller sea lion population in the Aleutian Islands. NMFS must also address the reviews of the 2010 FMP biop finding of killer whales being a significant source of mortality for the Steller sea lion. Failure to address these credible scientific opinions violates NEPA. The relevant data includes documentation of two transient killer whales from the central Aleutian Islands that had nitrogen values high enough to indicate that they fed on Steller sea lions regularly and that Steller sea lions may be the primary part of their diet. Also relevant are observations showing that Steller sea lions represented up to 14 percent of killer whale diets in the Aleutian Islands. Based on review of these and other data, the reviewers of the 2010 FMP biop found that killer whales are likely a major source of Steller sea lion mortality, and others found that killer whale predation could not be scientifically rejected as a cause of decline with the available data.

Response: Section 5.1.1.9 includes a description of killer whale predation on the entire WDPS of Steller sea lions using the best scientific information available. Table 5-11 includes abundance estimates of killer whales throughout the range of the WDPS of Steller sea lions. This section also describes killer whale predation in the Aleutian Islands and the Commander Islands and other locations in the range of the western and eastern distinct population segments. NMFS identifies killer whales as a cause of mortality for Steller sea lions in the 2008 Revised Recovery Plan, the 2010 FMP biop, and in the DEIS. The information provided in the DEIS gives background information on natural threats to Steller sea lions to understand the context for the proposed action. The predation of killer whales on Steller sea lions is not included in the methods to analyze the effects of the alternatives in Chapter 5. These methods use fisheries harvest and Steller sea lion biology to analyze effects of fishing on Steller sea lion incidental takes, disturbance, and prey availability. Chapter 5 will be revised to address reduced prey availability potentially leading Steller sea lions to increase foraging effort, which may make them more susceptible to killer whale predation.

CH5-37 Comment: Depending on the numbers of transients, only a small portion of killer whale diet needs to be sea lions to create a “predator pit” effect. Just 10 killer whales could consume the entire Western Aleutian Islands annual Steller sea lion pup production. Twenty-five killer whales could shift the central Aleutian Islands Steller sea lion population growth rate by 3 percent. It only takes 12 percent of the minimum count of transient killer whales counted west from the Shumagin Islands to fully explain the population trend of Steller sea lions in the central and western Aleutian Islands, even after applying the discount factors caveats identified in the 2010 FMP biop. Taken together with the new information in the 2010 FMP biop on Aleutian Islands productivity and forage ratios, as well as harvest exploitation rates, NMFS should have substantially revised its final RPA in the 2010 FMP biop.

Response: Killer whale predation was considered in the environmental baseline in the 2010 FMP biop and is recognized as an important source of mortality for Steller sea lions. Killer whale predation is discussed in Section 5.1.1.9 of the DEIS. The Revised Steller Sea Lion Recovery Plan (NMFS 2008) lists predation by killer whales as a potentially high threat to the recovery of the WDPS. In an ESA section 7 consultation, NMFS adds the effects of the proposed action to the natural and anthropogenic effects described in the environmental baseline to determine whether the action agency has insured that the proposed action is not likely to jeopardize the continued existence of a listed species or adversely modify or destroy designated critical habitat. The Revised Steller Sea Lion Recovery Plan also lists competition with fisheries as a potentially high threat to the recovery of Steller sea lions. In the 2010 FMP biop, NMFS concluded that it could not insure that the fisheries for Pacific cod and Atka mackerel in the western and central Aleutian Islands were not likely to jeopardize the existence of the WDPS or destroy or modify designated critical habitat for the WDPS when the effects of the action were added to the environmental baseline, which included effects of predation by killer whales.

CH5-38 Comment: The EIS should incorporate the discussion and findings of the 2010 northern sea otter recovery plan where the weight of evidence for the sea otter decline is predation by killer whales. The recovery plan rates this predation as “very likely” with a high degree of confidence over the entire western population geographic range. The EIS should incorporate known predation by killer whales on other marine mammals in the Aleutian Islands such as grey whales and northern fur seals.

Response: Section 5.1.1.9 includes descriptions of killer whale predation on other marine mammals including sea otters, gray whales, and northern fur seals. Section 5.1.2 also included information from the northern sea otter recovery plan that informs the analysis of the alternatives, limiting the discussion to the effects of the groundfish fisheries on sea otters rather than naturally occurring mortality.

CH5-39 Comment: The DEIS acknowledges that “although transient killer whale predation on Steller sea lions in the North Pacific has received substantial attention and study in recent years, major limitations in the available data result in substantial uncertainty, especially when trying to determine the historic impacts of killer whale predation” (DEIS at 5-56 to 5-57). The EIS must discuss whether this information is too costly to obtain and what the relevance of the missing data is.

Response: NMFS will continue to gather information on killer whale predation in Alaska waters as resources and priorities allow. Killer whales are identified as a threat to Steller sea lion recovery in the 2008 Steller sea lion recovery plan. The information in Section 5.1.1.9 provides the context for analysis of the effects of the alternatives including consideration of natural conditions for Steller sea lions. Section 5.1.1.9 contains the best scientific information available to NMFS. The lack of more detailed information on killer whale predation does not prevent the analysis of the effects of the alternatives in the DEIS using the methods described in Chapter 5, which apply fisheries harvest and Steller sea lion biology.

CH5-40 Comment: The EIS should incorporate the study and findings of Horning and Mellish (2012) regarding life history transmitter (LHX) tags and the proportion of sudden mortality predation events attributed to killer whales and sleeper sharks, including recent mortality events since the report was published, such as was included in the CIE briefing.

Response: Section 5.1.1.4.1 includes a discussion of the findings of Horning and Mellish (2012) regarding juvenile survival from the LHX tag study. Section 5.1.1.9 includes a discussion of killer whale predation on Steller sea lions in the GOA and includes Horning and Mellish (2012) findings regarding juvenile Steller sea lion mortality in the GOA potentially from killer whale and sleeper shark predation. The August 2012 presentation to the CIE review panel by members of the fishing industry stated that recent information from the Horning and Mellish LHX tagging study indicated 14 of 16 deaths of tagged Steller sea lions were likely due to predation. NMFS will further consider if this information is available to use in the background information in the EIS in Section 5.1.1.9.

CH5-41 Comment: Top-down hypotheses lack support and remain hypothetical (e.g., killer whale predation), as well bottom-up hypotheses (fishery competition) lacks evidentiary support and remains hypothetical.

Response: The top-down and bottom-up hypotheses for impacts on Steller sea lions are discussed in Section 5.1.1 of the DEIS. The types of information supporting these hypotheses and associated scientific uncertainty are included in the discussion.

CH5-42 Comment: The DEIS contains no evidence regarding whether disease was a predominant factor in the decline of the WDPS, and NMFS therefore concludes that disease played no role. However, NMFS bases this conclusion on population data from 1997 to 2000, despite the fact that the remainder of the

DEIS analysis uses the baseline of 2004 to 2010. The EIS must explain how NMFS reached the conclusion that fisheries are the primary cause of a decline in the WDPS population if it has no data determining whether infectious disease also affected the population during this time. It must further explain the relevance of this missing information and why it was unable to obtain it.

Response: NMFS has not reached the conclusion that fisheries are the primary cause of a decline in the WDPS of Steller sea lions. However, NMFS determined in the 2010 FMP biop that it could not insure that the Federal groundfish fisheries in the Bering Sea and Aleutian Islands area (and fisheries conducted on the Federal total allowable catch) were not likely to jeopardize the existence of the WDPS or destroy or adversely modify the WDPS' designated critical habitat. The baseline of 2004 to 2010 was related to fisheries data that was used to analyze the effects of the alternatives. Status information on environmental components included historical data that informed the analysis and may include information before 2004 or after 2010. Information on disease in Section 5.1.1.8 provides the best scientific information available on potential naturally-occurring effects on the WDPS of Steller sea lions. This information provides background on the status of Steller sea lions, but is not used in the methods to analyze the effects of the alternatives on Steller sea lions as explained in Section 5.2.

CH5-43 Comment: The EIS should expand the discussion of the presence and effects of contaminants (including organochlorines, heavy metals, and emerging contaminants) on Steller seal ions in the WDPS.

Response: Section 5.1.1.7 describes the best scientific information available on the effects of contaminants on the WDPS of Steller sea lions, including organochlorines and heavy metals. This discussion includes new information since the 2010 FMP biop was completed.

CH5-44 Comment: NMFS cannot rule out contaminants as the cause of the WDPS decline because no toxicological studies have been performed to determine the effects of organochlorines (OCs) on Steller sea lions. This potential for Steller sea lion exposure to contaminants is a significant gap in the understanding of the impacts of pollutants on Steller sea lions. Studies on other marine mammals have associated OC exposure with reproductive failures. If OCs are also causing reproductive failure in the Steller sea lion, this could be the cause of any population decline in the WDPS of Steller sea lions. NMFS must explain the relevance of this incomplete information and whether obtaining this information is infeasible or too costly. Exposure to OCs in other marine mammals has been associated with reproductive failures, population declines, carcinomas, and immune suppression. There is currently not enough information to determine what role exposure to contaminants plays in the health, survival, and recovery of Steller sea lions.

Response: NMFS agrees that more information on the potential effects of organochlorine (and other) contaminants on Steller sea lions would be helpful to understand the potential impacts on the population. In 2013, NOAA awarded a grant (\$1,385,410) to the Alaska Department of Fish and Game to study mercury contaminants in the WDPS of Steller sea lions. Section 5.1.1.7 of the draft EIS contains the best scientific information available on contaminants effects on Steller sea lions.

CH5-45 Comment: NMFS also lacks information related to the harmful effects of mercury on Steller sea lions. While the agency has identified that "further study is necessary," it has not contemplated the relevance of this missing data or the cost of obtaining it. Available data show that adult females and pups are likely the age classes most vulnerable to other toxic substances, and Steller sea lion pups from the WDPS had statistically higher mercury levels in kidney and liver tissues and lead in liver tissues than animals from the eastern distinct population segment (EDPS). Steller sea lion pups in the western portion of the range also appear to have higher mercury and PCB levels than those in the eastern portion of the range. It remains unknown whether sea lions have internal mechanisms that allow them to minimize the harmful effects of the contaminant by processing it. Data also show that the EDPS has recovered

sufficiently, but NMFS believes that the WDPS is still susceptible to population declines. The EDPS has statistically lower mercury levels than the WDPS. If Steller sea lions cannot process mercury, it may be a cause of population decline in the WDPS. This is highly relevant to the question of whether fishing pressure or other factors like contaminants are responsible for population effects, and NMFS must address the relevance.

Response: In Section 5.1.1.7, the best scientific information available is used to address the potential effects of mercury contamination on Steller sea lions. NMFS discusses the occurrence of mercury in different life stages of Steller sea lions and concludes that based on the studies discussed, the animals may have mechanisms that allow them to process or sequester the mercury, mitigating harmful effects. NMFS explains that further study should be done to understand this interaction and in particular fetal exposure. However, the methods for analyzing the effects of the alternatives on Steller sea lions in Chapter 5 use fisheries harvest and Steller sea lion biology, and do not determine the population level effects of mercury contamination of Steller sea lions.

CH5-46 Comment: The most relevant study available to NMFS addresses organochlorines (OCs) in pollock, and NMFS uses this study to conclude that OCs are likely not the primary cause of population declines and reduced natality in the WDPS. It bases this conclusion on the study's finding that OCs in pollock are ubiquitous throughout the study's sampling area. NMFS then posits that the OCs are not likely the primary factor for population declines in the WDPS because the EDPS population has been increasing. This explanation has no rational basis, as it does not account for Steller sea lion's consumption of other fish, primarily Atka mackerel, which contain unknown levels of OCs.

Response: NMFS agrees that Section 5.1.1.7 should be revised in the final EIS. The conclusion that the EDPS is increasing while consuming prey with higher OC contamination based on pollock OC concentrations across the WDPS is too broad of a conclusion and does not take into account the different diets between the eastern and western distinct population segments.

CH5-47 Comment: The EIS should consider whether conditions in the North Pacific have reduced carrying capacity for Steller sea lions such that recovery to pre-decline population levels may not be based upon the best available science or simply not possible under current environmental conditions.

Response: Sections 5.2.2.1.8 and 7.3 discuss carrying capacity and the potential impacts on Steller sea lions and the Aleutian Islands marine environment using the best scientific information available, including the 2010 FMP biop, the Ecosystem considerations report for the 2012 Stock Assessment and Fishery Evaluation report for groundfish of the Bering Sea and Aleutian Islands Management Area (NPFMC 2012), and the Aleutian Islands Fishery Ecosystem Plan (NPFMC 2007). The DEIS did not examine carrying capacity in relation to recovery of Steller sea lions as this information was not used in the methods in Chapter 5 to analyze the effects of the alternatives on Steller sea lions and is outside of the scope of the analysis.

CH5-48 Comment: One cannot interpret response of Steller sea lion population in areas of increased fishing protection measures without controlling for other stressors (e.g., predation).

Response: NMFS agrees it is difficult to differentiate the response of Steller sea lions to fisheries effects and non-fisheries effects. Section 5.1 reviews the best scientific information available on natural and human-caused effects on Steller sea lions so all the factors that potentially affect Steller sea lions are provided in the DEIS. The DEIS identifies potential fisheries effects under the alternatives in the context of the status of Steller sea lions and other potential stressors on the population.

CH5-49 Comment: CIE reviewers of the 2010 FMP biop agree that disease, parasites, and contaminants are unlikely to have played a role in the Steller sea lion decline.

Response: These issues were addressed in the DEIS in Sections 5.1.1.7 and 5.1.1.8, providing the best scientific information available on these topics. Recent information on mercury contamination in the Western Aleutian Islands (Castellini et al. 2012) indicates that there is more potential for effects on Steller sea lions than indicated by information available for the 2010 FMP biop. This recent information is addressed in Section 5.1.1.7.

CH5-50 Comment: The CIE reviewers of the 2010 FMP biop find that fishery-induced and natural nutritional stress and killer whale predation on Steller sea lions are possible. The reality is that the reasons for Steller sea lion lack of recovery in some sub-regions are complicated and may never be unraveled.

Response: NMFS agrees that Steller sea lions may be affected by a number of stressors and the natural and human caused stresses on Steller sea lions are difficult to separate. These topics are discussed in Section 5.1.1 of the DEIS.

Overlap between fisheries and Steller sea lions

CH5-51 Comment: The DEIS does not take a “hard look” at the exposure analysis, provides no meaningful quantification of the degree of potential overlap with fisheries and Steller sea lions, and provides no scientific evidence that fisheries overlap results in competition that has a negative effects on Steller sea lion populations. Chapter 5 continues to assert without scientific evidence that competition may occur if there is overlap between fisheries and Steller sea lions in terms of size of fish, depth, temporal, and spatial overlap. However the DEIS provides no meaningful quantification of the individual and cumulative extent of any potential overlap between fisheries and Steller sea lions.

Quantitatively evaluate the extent of overlap between fisheries and Steller sea lions for each species (pollock, Pacific cod, and Atka mackerel) for size of prey, predominant and proportions of Steller sea lions dive depth and fishing depth, and spatial use by season (from telemetry). Section 5.2 needs a quantitative reference to the size of Pacific cod found in Steller sea lion prey (see (O.A. Ormseth et al. 2008); Bernard et al. (2011); and BSAI Pacific cod SAFE available at <http://www.afsc.noaa.gov/REFM/stocks/assessments.htm>). The EIS should also include the shift in the size of the Atka mackerel in Area 542 as a result of fishing under the interim final rule. Providing the extreme end of the range of the size of prey estimated from scat samples in Section 5.2 is a selective presentation of the information and does not inform the reader as to the distribution of the sizes of pollock found in scats.

Quantitatively examine the potential depth overlap between fisheries and Steller sea lions in terms of proportions of dives in depth strata, and proportions of the fishery in depth strata. The DEIS presents only the maximum dive depths of Steller sea lions compared to mean fishing depths.

Examine telemetry data for spatial and temporal overlap with fisheries, and clearly explain the relevance and significance of any overlap found. What the DEIS does provide is non-comparable metrics (e.g., maximum dive depths compared to average fishery depths).

Response: NMFS disagrees with the comment that it did not take a “hard look” at the exposure analysis, that it did not provide meaningful quantification of the degree of potential overlap with fisheries and Steller sea lions, and that it did not provide scientific evidence that fisheries overlap could result in competition that has a negative effects on Steller sea lion populations. Quantitative information is used in

Sections 5.2.2.2 through 5.2.2.6 when available and appropriate to inform the analysis and also is provided in Section 5.2.2.1 when available to describe potential fisheries overlap with Steller sea lions. Section 5.2.2.1.2 describes information related to the size of prey and will be revised in the final EIS to provide lengths of the three prey species. Section 5.1.1.6 has details on Steller sea lions at-sea habitat use, including quantitative information on diving depth and location. Section 5.2.2.1.3 describes depth of foraging and fisheries, including reference to Tables 5-8 and 5-10 for diving depths and estimated fishing depths from Chapter 3. Section 5.1.1.6 also describes the spatial use of habitat by Steller sea lions, which was considered with fisheries location information in Chapter 3 for the analysis of the effects of the alternatives in Sections 5.2.2.2 through 5.2.2.6. Section 5.2.2.1.9 identifies the discussions in the 2010 FMP biop of the factors that may be considered in analyzing the effects of fishing on Steller sea lions and the additional information that could provide better understanding of potential fisheries overlap of prey size, depth of foraging and fishing, and location of foraging and fishing. The method used in Sections 5.2.2.2 through 5.2.2.6 for the analysis of effects of the alternatives was based on the best scientific information available and provides the ability to determine the effects of the alternatives on Steller sea lion prey availability. See response to Comment CH1-16 for a description of the development of this method.

CH5-52 Comment: It is questionable whether any amount of a Bayesian statistical manipulation of the Platform of Opportunity (POP) data set in Himes Boor and Small (2012) without clear measures of the various types of sighting effort can provide any meaningful identification of Steller sea lion “high use” areas. Further analysis of the POP data is needed to determine the merits of the Himes Boor and Small (2012) approach and whether it supports the actions taken based on the 2010 FMP biop. It is necessary to analyze the positive sightings in the POP data (including location, target, bycatch rate data without vessel name or target quantity and foreign vessels) in the context of the “null” observations from the same platforms.

Response: Himes Boor and Small (2012) describe in great detail their rigorous approach to derive effort-corrected data from the POP dataset, and discuss effects of sparse or missing data, how encounter rate values should be interpreted, and potential biases associated with their model assumptions. The conclusions of Himes Boor and Small (2012) are supported by their study methodology and results.

CH5-53 Comment: Steller sea lion sightings and telemetry locations outside of critical habitat do not appear to align with fishing locations for groundfish.

Response: Fishing locations for groundfish are shown in Chapter 3 figures and Steller sea lion telemetry and other location data are discussed in Section 5.1.1.6. Overlap occurs between Steller sea lion locations and fishing locations outside of critical habitat.

CH5-54 Comment: There is not considerable overlap between the size of Atka mackerel eaten by Steller sea lions and those harvested in the Atka mackerel fishery. The information provided to the CIE reviewers of the 2010 FMP biop and the 1998 biological opinion are better sources of this type of information than Zeppelin et al. (2004). Zeppelin et al. (2004) is based on scat samples from 1998 to 2000 (with no winter samples from the western Aleutian Islands) and the comparisons are over a very coarse scale (entire range of WDPS aggregated for scat; Eastern Bering Sea and GOA aggregated for fishery length information). Steller sea lions eat Atka mackerel of a mean size smaller than fishery size. The more recent information indicates that the extent of size overlap for Atka mackerel is considerably less than stated in Zeppelin et al. (2004).

Response: The DEIS used the best scientific information available regarding the size of Atka mackerel used as Steller sea lion prey and the size of Atka mackerel taken in the Atka mackerel fisheries. Section 5.2.2.1.2 discusses prey size and includes reference to more recent analysis of prey size than the

1998 biological opinion on the effects of the Atka mackerel and pollock fisheries. Section 5.2.2.1.2 also includes Atka mackerel prey size information from Zeppelin et al. (2004), which was presented to the CIE reviewers. NMFS has no additional information that would lead to a conclusion that Atka mackerel prey size overlap with the fisheries is considerably less than stated in Zeppelin et al. (2004). As described in Section 5.2.2.1.2, the evaluation of the overlap of the size of prey eaten by Steller sea lions and the size of fish harvested in the fisheries is confounded by a number of factors, including the biases of estimating prey size based on otoliths from scat samples and scientists being able to measure only what was consumed, not what was preferred by the animals.

Population Effects Analysis

CH5-55 Comment: NMFS overlooks the work of Dr. Maschner (Maschner et al. (n.d.) and Trites et. al. (2010), which were included in commenter's submissions. Dr. Maschner's work was mentioned in the 2010 FMP biop, but it is not analyzed in the DEIS. The DEIS does not adequately explain NMFS's consideration of the conclusions from Trites et al. (2010) in its decision to continue to restrict Atka mackerel fishing. By failing to do so, the agency ignores reputable scientific opinion that is relevant to the key question of whether fishery restrictions correlate to a WDPS population decline.

Response: Maschner et al. (n.d.) examines the indigenous, ethnohistoric, and archaeological information on the decline of Steller sea lions in Alaska. They found that these data indicate that Steller sea lion numbers have declined and recovered repeatedly over the past 4,500 years and were last at critically low numbers during the 1870s to 1920s. The Maschner et al. (n.d.) paper focused on evidence collected from midden sites in the GOA and Eastern Aleutians; areas where the Steller sea lion population is increasing currently. As such, they offer no explanation as to how the population fluctuations that they hypothesized could explain declines in abundance occurring in diverging directions like currently observed among subareas. This paper will be included in the discussion in Section 5.1.1.2 of the final EIS to provide historical information related to the proposed action. Trites et al. (2010) analyze the Aleutian Islands Atka mackerel fishery and Steller sea lion decline. Trites et al. (2010) apply generalized estimating equation models to Atka mackerel harvest and sea lion numbers to test whether numbers of sea lions or changes in numbers of sea lions were related to the frequency of trawling (number of hauls) and amounts of fish caught within 10, 20, or 40 nautical miles of sea lion rookeries and haulouts. They found that the models failed to find a relationship between average catch as a proxy for Atka mackerel abundance and sea lion numbers. This paper will be included in the discussion in Section 5.2.2.1.4 in the final EIS. Both of these papers provide additional information to consider for the description of the population trends and for potential fisheries effects on Steller sea lions.

CH5-56 Comment: Chapter 5 is deficient because NMFS selectively relied on incomplete analyses and omitted relevant information from the analysis. Information can be gleaned from documents that were presented to the Council, but not incorporated into the DEIS. These papers include the draft agTrend paper (Johnson and Fritz, paper in prep), the May 24, 2013, DeMaster memorandum, the May 2013 analytic approach memo available from http://alaskafisheries.noaa.gov/npfmc/PDFdocuments/conservation_issues/SSL/AnalyticalApproach5-28-13.pdf, and the June 4, 2013, DeMaster Powerpoint presentation for the Council. Several questions exist about the methods in Johnson and Fritz (in prep). The DeMaster memorandum does not provide a quasi-extinction probability for the U.S. WDPS as a whole population, and asserted that any population projection or population viability analysis (PVA) needs to be based on the total population for the U.S. WDPS in the same manner as the Goodman PVA analysis in the 2008 Revise Recovery Plan for Steller sea lions.

Response: NMFS disagrees that Chapter 5 is deficient or that relevant, available information was omitted from the DEIS. The analysis cited as Johnson and Fritz (in prep) in the DEIS is now in review

for publication in the journal *Methods in Ecology and Evolution*. Also, the results of that analysis have been included in the technical memorandum (Fritz et al. 2013), which was cited as Fritz et al. draft in the draft EIS in section 5.1.1.2. The citations for these references will be updated in the final EIS. The agTrend analysis (Johnson and Fritz) (in review) presents a novel method for calculating aggregated Steller sea lion abundance and trends by augmenting missing survey observations and was prepared in response to external reviews of the 2010 FMP biop that were critical of NMFS's method for estimating abundance based only on direct and interpolated counts from trend sites. The trend information in Johnson and Fritz (in review) represents the best scientific information available and has been reviewed in compliance with the Information Quality Act and by the Council's Scientific and Statistical Committee (SSC). At the June 2013 Council meeting, NMFS presented results of completed studies and methods for planned studies to the Council's SSC. The results of the completed studies are included in Chapter 5 of the DEIS. NMFS presented the methods for the population projection, including estimates of quasi-extinction over various future time frames to the Council's SSC for its review and comment. The SSC did not identify deficiencies with the population projections based on the methods in Johnson and Fritz (in review). NMFS agrees however that it is useful to look at the probability of quasi-extinction by sub-region as well as the WDPS as a whole, and NMFS will include this information in Section 5.1.1.2 of the final EIS.

CH5-57 Comment: The DEIS does not include a meaningful discussion of direct statistical testing or a comprehensive review or analysis of studies that examine the relationship between fishing effort and Steller sea lion population trends as in Bernard et al. 2011 and recommended by the CIE review of the 2010 FMP biop. Instead of encouraging these studies, the DEIS disparages Bernard et al. (2011) (primarily regarding the power analysis) while providing no direct quantitative statistical analysis to support its criticisms. The DEIS does not include an informative synthesis of the description and results of the ten statistical studies. The DEIS only includes a list of studies that examined the relationship between fisheries and Steller sea lions, but without any comprehensive review. The DEIS includes a discussion of data issues, but fails to provide any quantitative statistical analysis. The lack of comprehensive review and consideration of these ten studies in the DEIS is inconsistent with NEPA's standards for rigorous scientific analysis, especially considering that all but one of these studies was available prior to the 2010 FMP biop, and all the studies have been available to NMFS for the DEIS for at least two years. Other studies were commissioned by NMFS and still received scant review in the DEIS (e.g., Calkins (2008)). NMFS improperly proposes to analyze the statistical studies in a future simulation, but these studies need to be included in the DEIS in order to determine the effects of the proposed action.

Response: This issue is addressed in Chapter 5. The DEIS included a discussion about the issue raised in Bernard et al. (2011) regarding studies conducted to quantify the relationship between explanatory variables such as fishery catch, effort, or catch per unit of effort and Steller sea lion counts. Section 5.2.2.1.9 describes the analysis that NMFS will undertake to test whether external drivers of sea lion survival can be detected with the types of regression analyses used in the studies cited in Bernard et al. (2011). The methods for this analysis were provided to the Council's SSC in April 2013 with additional detail presented to the SSC in June. The objective of this analysis is to understand if the methods in the studies cited by Bernard et al. (2011) have sufficient statistical power for determining whether presence or absence of fishing has an effect on Steller sea lion population size. If the methods are found to be acceptable, they could then be used for correlative studies of sea lion population trends and fisheries effects. The resources to complete the review of the fishery correlation study methods and to develop a subsequent correlative study, should it be warranted, are limited so that the results of this work are not available for the EIS on its current timeline, but may be available to inform future analyses.

CH5-58 Comment: The States' sponsored review of the 2010 FMP biop directly contradicts the conclusion in the DEIS at p. 5-69 that "at this point it is not possible to determine the population level effects to Steller sea lions from the indirect effects of fishing on prey availability through this NEPA

analysis...Insufficient information exists to quantify Steller sea lion population effects with various levels of fishing.” No statistical relationships of negative effects on Steller sea lion populations were found by Bernard et al. (2011) from the indirect effects of fishing since 2000. The statement on page 5-69 in the DEIS is simply wrong and should be corrected. With the addition of the meta-analysis and conclusions of Bernard et al. (2011), there is sufficient evidence and information that fisheries do not affect Steller sea lions. The question of appropriate level of statistical power depends on what level of effect is to be detected. If the question under NEPA is to determine if the indirect effect of fisheries on Steller sea lion populations is “significant,” then the appropriate level of power is to detect a significant or appreciable effect. Why is NMFS trying to detect an extremely small or insignificant effect of fisheries on the WDPS of Steller sea lions that may require more statistical power?

Response: Based on the best available information, the description of the analytical approach and the information available to analyze the effects of the alternatives on Steller sea lions on page 5-69 of the DEIS is accurate. NMFS is evaluating Bernard et al. (2011) to determine if the studies cited therein provide the statistical power to correlate the effect of fishing on Steller sea lion populations. When developing the DEIS, NMFS reviewed the information available to inform the analysis and determined that population level analysis was not possible with the available information and is not necessary to determine the potential effects of the alternatives on Steller sea lions and their critical habitat. Section 5.2.2 describes the method used to analyze the effects of the alternatives with the best scientific information available and the assumption applied to the analysis. Best scientific information available includes quantitative fisheries catch information in time and space and critical habitat locations in relation to fishing activity. This information is used to compare and contrast the effects of the alternatives.

NMFS prepared an EIS for this action because the alternatives have the potential to cause significant impacts. In general, an EIS provides a full and fair discussion of significant environmental impacts and informs decision makers and the public of reasonable alternatives that would avoid or minimize adverse impacts.

CH5-59 Comment: The EIS does not analyze the effects of fishing on the WDPS of Steller sea lions as a whole. No unit smaller than a distinct population segment is relevant when considering actions that arise from claims under the provisions of the ESA. Analyzing effects on the entire WDPS is required to take a hard look at the proposed action and to address the controversy that required an EIS. The EIS should analyze the extent, if any, if the effects of fishing on prey availability have any detectable impact on the WDPS as a whole, including on the health, size and status of the WDPS and the duration of any effect.

Response: The purpose and need of the action focuses the alternatives and the analysis of the effects on the action area, which is a portion of the WDPS of Steller sea lions. Section 5.1.1.2 describes the population trend for subareas and the entire U.S. WDPS of Steller sea lions to put the population trend in the action area in context for the entire population. The analysis focuses on the effects on Steller sea lions that occur in the action area (Aleutian Islands subarea). Further explanation can be found at Section 5.1.1 and Section 5.2.

CH5-60 Comment: The expectation that Steller sea lion numbers in the Aleutian Islands would increase under Alternative 1 based on experiences with fisheries management and Steller sea lions in the GOA is not based on science. There is insufficient evidence that Steller sea lion numbers increased in the GOA due to fisheries management to protect sea lions. The multispecies model in the 2010 FMP biop showed that increases in sea lion numbers in the last decade were a coincidence.

Response: The DEIS describes the best scientific information available on Steller sea lion population trends in Section 5.1.1.2, and Sections 3.1 and 7.5.1 describe multispecies modeling. Alternative 1, the RPA in the 2010 FMP biop, is intended to insure the groundfish fisheries are not likely to jeopardize the

continued existence of Steller sea lions or adversely modify or destroy their critical habitat. The DEIS presents both natural and anthropogenic effects on Steller sea lions. These effects on Steller sea lion populations are difficult to separate, and information is not currently available to conclusively establish linkages between Steller sea lion population trends and fishery management measures.

CH5-61 Comment: The EIS should evaluate the effect of the Aleutian Islands pollock closure on the population trends of pollock and Steller sea lions in the Aleutian Islands, and whether that closure remains necessary to protect Steller sea lions in the Aleutian Islands.

Response: The effects of the alternatives on pollock and Steller sea lions are analyzed in Chapters 3 and 5 of the DEIS. The alternatives analyzed include the closure of directed fishing for pollock in critical habitat of the Aleutian Islands under Alternative 1 and additional pollock fishing that would be allowed under Alternatives 2 through 5. Impacts on pollock stocks from the alternatives are described in Section 3.4.4. Impacts on Steller sea lions from the pollock fishery management under the alternatives are described Section 5.2.

CH5-62 Comment: Despite overall positive population trends for the WDPS of Steller sea lions, the DEIS looks to effects within sub-regions of the WDPS to determine effects on the population as a whole. It is unclear how NMFS has attempted to impute the declines from these regions onto the WDPS as a whole. The EIS must identify and clarify the relationship between the sub-regional declines and the overall health of the WDPS, and explain how its conclusions stand up to the criticisms in the reviews of the 2010 FMP biop.

Response: Section 1.1 of the DEIS identifies the relationship between the sub-region declines and the overall status of the WDPS relative to listing under the Endangered Species Act. The 2008 Steller sea lion recovery plan provides the connection between the viability of the sub-regions and the WDPS as a whole. NMFS's examination of sub-regions in the 2010 FMP biop was upheld by the U.S. Court of Appeals for the Ninth Circuit in *State of Alaska v. Lubchenco*, No. 12-35201 (2013).

CH5-63 Comment: The DEIS continues to provide considerable discussion of sub-regional and rookery cluster area population trends within the U.S. WDPS, but omits the big picture of the total population growth and trend of the U.S. WDPS as a whole for 2000 to 2012. Chapter 5 of the DEIS continues to focus on sub-regional populations and treats all sub-regions as equally important—whether they are core of the range or not. In contrast, the June 4, 2013, Powerpoint presentation by NMFS to the Council based on agTrend analysis states that probability of the U.S. WDPS of reaching the quasi-extinction level in fifty years (2062) is zero. This conclusion should be in the DEIS in the population trends discussion.

Response: Section 5.1.1.2 and Figures 5-3 and 5-8 show the WDPS of Steller sea lion trends for non-pups and pups, respectively, for the time period 1990 through 2012. In addition this section also shows sub-region trends as these are important to consider in the analysis of the potential effects of the fisheries at a sub-regional level. This is based on the proposed action being focused in two of the sub regions and the choice to consider effects on the sub-regions as identified in the 2008 Steller sea lion recovery plan. The June 2013 Powerpoint presentation was not in contrast to the text in the EIS on sub-regions but provided additional trend information. Section 5.1.1.2 will be revised in the final EIS to include relevant information from the agTrend analysis and on overall population trends in the WDPS of Steller sea lions.

CH5-64 Comment: NMFS proposes to use a sub-region viability analysis to predict the future condition of the sea lion population. The analysis uses a statistical method to estimate an aggregated abundance trend (via the 'agTrend' statistical package for the open-source statistics program 'R'). This method, however, makes the assumption that whatever conditions that resulted in the trend for the last few years of data will persist into the future. This is an unreasonable assumption to make when attempting to forecast

the status of the Steller sea lion population. The resultant forecast favors the overall positive trends of the last 20 years but does not account for any unpredictable, random events that may occur in the future. The new method also ignores the past documented sea lion population trends, including the sudden and dramatic drop of the population in the 1980s. Considering that there have been regime shifts, management changes, and at least one unpredicted and unexplained change in the Steller sea lion population trend in the last 30 years, the potential for such events to occur again must be included in any analysis. The sub-region viability analysis using agTrend should incorporate stochasticity and the observed sea lion population trends of the past. Even so, in contrast to the optimistic forecast for the overall western population trend, the current agTrend sub-region viability analysis results in a high proportion of projection scenarios culminating with a loss of the rookeries in the western Aleutian Islands.

Response: NMFS will revise Section 5.1.1.2 in response to this comment. Section 5.1.1.2 will discuss the results of the agTrend forecast and an additional viability analysis conducted by NMFS for comparison and an assessment of qualitative inference with the results of the agTrend forecast method presented in Johnson and Fritz (in review).

CH5-65 Comment: Several issues were identified with the trend analysis (Johnson and Fritz (in prep)) and the forecasted persistence analysis that should be addressed in Chapter 5. Johnson and Fritz (in prep) examines regional trends in population abundance for the U.S. WDPS and needs to include a 2000 to 2012 trend for the U.S. WDPS as a whole. Is the referenced population only the non-pup population, or is it the total population (pups and non-pups)? If the paper is only using non-pup data then this does not represent the whole or total population and may not accurately reflect population status and trends. The trend for the Central Gulf of Alaska (CGOA) appears to be inaccurate and does not reflect the growth in pups and non-pups in the CGOA and brings into question the augmentation methodology. From the results sections of the draft paper it appears that either the 2011 non-pup count was not “augmented” or omitted or the “augmentation” method is suspect and biased low. With its apparent reliance on non-pups in Johnson and Fritz (in prep), the augmentation method appears to not accurately represent the total population growth in CGOA. Of interest in the CGOA is the decline in pups and non-pups from 2000 to 2004 followed by steady increases from 2004 to 2011.

Response: Johnson and Fritz (in review) is referenced as Johnson and Fritz (in prep) in the DEIS. Figure 5-3 shows the U.S. WDPS total non-pup population trend from 1990 to 2012, and Figure 5-8 shows the total pup population trends from 1990 to 2012. Section 5.1.1.2 discusses and Figures 5-8 through 5-10 include trends in pup counts, which are similar to non-pup trends. The non-pup trends are used in the recovery plan criteria for sub-regions identified in the recovery plan, and are an appropriate reference population for this analysis of trends in different sub-regions. The best scientific information available was used in the analysis of the CGOA pup and non-pup trends, and the results reflect these data.

CH5-66 Comment: Provide a quantitative scientific explanation on how the entire WDPS of Steller sea lions is in jeopardy. Include discussion of Boyd (2010) on projected Steller sea lion populations and potential risk of extinction.

Response: NMFS uses the best scientific and commercial data available to insure that its actions are not likely to jeopardize the continued existence of an endangered species. If that best scientific and commercial data available is quantitative, then NMFS will use it in its determination. The quantitative and qualitative discussion of NMFS’s jeopardy determination is incorporated by reference in the DEIS from the 2010 FMP biop (Section 5.2.2.1.9), and Boyd (2010) is discussed in Section 5.1.1.4.3. A discussion on quasi-extinction risk will be included in Section 5.1.1.2 of the final EIS.

CH5-67 Comment: The EIS should evaluate the WDPS of Steller sea lions in the context of trends of pinnipeds globally (including ESA listed and unlisted populations) and the potential impacts of fishing

activities on those populations. Include a discussion and comparison of pinniped populations in the world whose populations are stable or increasing in the proximity of groundfish fisheries. The discussion should include Parrish et al. (2011) and the importance of including environmental variability and changes in carrying capacity in recovery.

Response: A comparative study of other pinniped populations and other groundfish fisheries was not included in the DEIS. These types of reviews have been performed in the 2000 biological opinion on the groundfish fisheries, which will be incorporated by reference in Section 5.2.2.1 in the final EIS. NMFS cannot find the reference Parrish et al. (2011), and therefore, cannot consider it for the final EIS. Any comparison of global pinniped status to Steller sea lions in the Aleutian Islands would need to consider the Aleutian Islands ecosystem, Steller sea lions in particular, or how groundfish fisheries are managed in the Aleutian Islands. Environmental variability is addressed in Chapter 7 and in Section 5.1.1.

Population Trends

CH5-68 Comment: The EIS should clearly describe the best estimate of the total population of Steller sea lions in the WDPS, rather than only estimates from trend sites, and population trends. The revisions should include methodology and recent and historical time periods that include fluctuations in populations. Provide a discussion on the methods to improve the accuracy of Steller sea lion surveys including the use of drones; compensating for stage of tide; adding sites of known Steller sea lion use; dropping sites with no recent Steller sea lion use. Include the total population estimates and trend of Steller sea lions in the Alaskan and Russian portions of the WDPS from 2000 to 2012.

1. Provide the total pup counts (not trend rookeries) from surveys from 2002 to 2011 (and resulting total population estimates for the U.S. WDPS (from the 3.5 pup multiplier). Provide total pup counts by subarea 2002 to 2011 (not trend rookeries).
2. Provide the total unadjusted non-pup counts (in addition to trend sites). Compare to the total unadjusted non-pup counts from the 2008 survey. Compare 2011 survey to 2008 survey for only sites surveyed in both years (as was done in the NMFS comparison of the 2007 to 2004 survey) and provide non-pup population trend from 2008 to 2011.
3. Compare population trend analysis from total population estimates for the U.S. WDPS to trend analysis from the trend sites. The EIS should provide a comparison of the total WDPS population trend 2000 to 2012 as calculated from total population estimates (from pup surveys and multipliers) and as calculated from non-pup trend site analysis.
4. Provide a clear explanation of the methodology in non-pup trend site counts and analysis including a list of all the inherent adjustments (e.g., camera angle, adjustments for Steller sea lion movements). Provide what counts are included and what is excluded from the counts or not considered in the counts (e.g., animals at sea, Steller sea lions at Round Island and other locations at the time of survey with known Steller sea lion presence).
5. Include Steller sea lion counts from Round Island. Provide explanation why these counts are not used in the non-pup population estimate or in the Steller sea lion minimum population estimate.
6. Provide information regarding numbers, timing of Steller sea lion aggregations in the WDPS (e.g., St. Lawrence Island) and the EDPS (e.g., Akwe, Sitka) including branding information.
7. Provide information on the extent and timing of movement from the WDPS to the EDPS and from the EDPS to the WDPS). Provide the proportion of sampled pups at EDPS rookeries that are from WDPS females.

Response: Sections 5.1.1.1 and 5.1.1.2 of the DEIS describe the population abundance and trends for the entire WDPS of Steller sea lions pups and non-pups based on the best scientific information available, including the 2000 to 2012 time period. Section 5.1.1 will be revised to refer the reader to Johnson and Fritz (in review) and in Fritz et al. (2013) for details of survey methodology and history.

These references are included in the DEIS as Johnson and Fritz (in prep) and Fritz et al. (draft). The final EIS will be revised to update these references. Counts and trend estimates make no adjustment for movement between DPS or between sub-regions. See Johnson and Fritz (in review) for what site counts are used (all with >2 non-zero counts since 1975) and how counts are adjusted with the change in methodology from oblique to vertical camera angles. Animals at sea (if they are not hauled out or in the immediate nearshore area) are not included. For breeding season index counts (June through early July) no counts at haulouts or rookeries in the Bering Sea north of Amak Island are included (e.g., Pribilof Islands, Round Island, Cape Newenham, St Matthew, St. Lawrence). See Fritz et al. (2013) for all other methods and detailed on site by site counts from 2008-2012. See www.afsc.noaa.gov/nmml/alaska/sslhome/databases/adult.php for counts from previous years. Considering the 10-year generation of Steller sea lions, it is not clear what the purpose of doing a 2008 to 2011 comparison would be.

As explained in Section 5.1.1.1, the pup multiplier used is 4.5, but this section further explains the assumptions behind using the value of a multiplier. The number of pups used to estimate the WDPS population was from all sites. In Section 5.1.1.2, the AFSC provided analysis of non-pup count data using all sites, (not just trend sites) to estimate regional and overall population trends for the U.S. WDPS of Steller sea lions between 2000 and 2012. Steller sea lion counts at Round Island have not been collected in the same manner as other aerial survey counts and are therefore not included in the count data used to estimate the population. Bristol Bay has not been included in aerial survey routes because it would require additional survey days that are not funded. Recent Round Island summer counts from the U.S. Fish and Wildlife Service would add several hundred animals to minimum estimate (less than 1 percent of the estimated population). Question 7 does not explain the utility of providing counts of ephemeral concentrations of sea lions at seasonal feeding areas like the Akwe River mouth. There has not been any branding at those sites. The U.S. Forest Service has provided annual reports to the Alaska Department of Fish and Game (ADF&G) that include the annual counts of Steller sea lions around the Akwe and Alsek Rivers. Likewise, ADF&G has some counts at St. Lawrence Island Steller sea lion sites in past years. However, these are not summer counts so they do not occur at the same time as the Steller sea lion aerial survey and are not used in the population estimates.

Section 5.1.1.4.3 describes the movements of Steller sea lions, including branding resight information and movement timing based on animal age and sex. Cross boundary movement between the eastern and western distinct population segments and pups on eastern sites from WDPS females also are described in Section 5.1.1.4.3. Genetic samples from EDPS pups have not been collected since 2005. Therefore, there are no new, published data available to inform the EIS background information beyond what has already been provided. Likewise, NMFS has not collected genetic samples from pups in the eastern portion of the WDPS to determine what proportion of these pups might have mtDNA haplotypes unique to the EDPS. This additional genetics information from pups would be helpful to understand movement across the DPS boundary between the east and west.

CH5-69 Comment: The EIS should evaluate in greater detail the movements of Steller sea lions between and among subareas in the Aleutian Islands, and describe dispersal of Steller sea lions from their natal rookeries.

1. Provide brand/resight movement and dispersal information between rookeries within Russia and outside Russia to the U.S. WDPS. Include, for example, break outs by male/female and adult/juvenile as in the Burkanov presentation.
2. Provide brand/resight movement between rookeries; between subareas; between eastern and western distinct population segments; between Russia/U.S. WDPS. Breakout as in Burkanov presentation.

3. Provide brand re-sight information and timing from known Steller sea lion aggregations such as St. Lawrence Island, Akwe River, Sitka, Berners' Bay, Round Island and breakout as Burkanov presentation.
4. Include results and comparison of previous movement studies such as Raum-Suryan et al. (2002) and other relevant studies.
5. Provide potential reasons on why a) Medny Island is the only Russian rookery that has no immigrants (among branded animals) in all categories (e.g., adults, juveniles, male/female); b) why Medny has the longest dispersal distance of branded animals of all Russian rookeries; and c) the extent and direction of that dispersal from Medny Island to locations in Russia and Alaska.

Response: Section 5.1.1.4.3 provides a discussion of movement of Steller sea lions using the best scientific information available. This section includes a discussion of the movement of Steller sea lions among Russian and U.S. sites, including by age and sex (Tables 5-5 through 5-7) and to locations in the Bering Sea and GOA. Figure 5-12 show reproductive females movement between the western and eastern distinct population segments and the text summarizes what is known about Steller sea lion aggregations at different times of the year depending on reproduction and cites (Raum-Suryan et al. (2002)). Table 5-6 shows 17 sightings of Steller sea lions branded in the U.S. of different ages and sexes occurring on Medny/Yugo-Vostochny rookery. The discussion of the dispersal to and from Russia was focused on the movement to and from the action area to inform the status of Steller sea lions within the location where the effects of the alternatives are analyzed. The discussion does not include movements from Russian sites to other Russian locations as this would not inform the analysis of the effects of the alternatives in the action area.

CH5-70 Comment: The DEIS gives only cursory treatment to the work of Dr. Boyd (Boyd 2010), whose study found that decreased Steller sea lion abundance in some regions can be attributed to internal re-distribution of juveniles and that the risk of extinction of Steller sea lions has declined to a level that they should no longer be listed. The DEIS mentions this study only once, and without explanation concludes that “the above brief synthesis of sea lion movement does not support his assumption of such unconstrained movement” (DEIS at 5-31). While NMFS cites Dr. Boyd’s research, it provides no explanation of how it reached this conclusion or whether it factors into the agency’s analysis.

Response: Section 5.1.1.4.3 discusses movements of Steller sea lions and cites Boyd (2010). This section will be revised in the final EIS to explain why the synthesis of the movement information provided in this section does not support Boyd’s (2010) assumption of unconstrained movement among regions. The clarification of this section will provide additional information on the movement of Steller sea lions.

CH5-71 Comment: The probability of extinction analysis in the May 24, 2013 DeMaster memorandum uses the quasi-extinction threshold of 4,743 individuals—the threshold population size from the Goodman PVA. The Goodman PVA was based on a total population (pups and non-pups) of the U.S. WDPS. The quasi-extinction projection in the May 24, 2013, DeMaster memorandum appears to be based on trend analysis for non-pups only in 2000 to 2012 (from agTrend). The use of a total population threshold to evaluate non-pup projections seems to represent dissimilar datasets.

Response: The May 24, 2013, DeMaster memorandum discusses how the quasi-extinction threshold in Goodman’s analysis in the Steller Sea Lion Recovery Plan (NMFS 2008a) was applied in the updated quasi-extinction forecast. The quasi-extinction threshold in the Goodman analysis is based on a minimum viable breeding population of 1,000 and takes into account the juvenile portion of the total population and

the sex ratio of reproductively active animals in the U.S. WDPS to arrive at a non-pup population size of 4,743 individuals.

CH5-72 Comment: Re-examine the efficacy and relevancy of rookery cluster areas (RCAs) and sub-areas in context of Steller sea lion movement information. The CIE reviewers raised a number of concerns regarding the basis of the RCAs. The relevancy of the RCAs should be re-examined given these concerns as well as in light of information regarding Steller sea lion movement.

Response: The DEIS includes Figure 5-1, 5-6, and 5-10 in Section 5.1.1 that shows the relationship of the RCAs to fisheries management areas and Steller sea lion sub-regions identified in the 2008 Recovery Plan for Steller sea lions and provides population trend information at the RCA and sub-region scales. The DEIS does not further evaluate or use the concept of RCAs in the analysis of the effects of the alternatives on Steller sea lions. Steller sea lion movement is discussed in Section 5.1.1.4.3. The concept of RCAs is included in the DEIS only in the context of information that informs the analysis in the DEIS, such as Steller sea lion population information that is specific at this level in relation to fishing activities.

Prey

CH5-73 Comment: The EIS should include the estimation of the proportion of Pacific cod in the entire Aleutian Islands prey field. The EIS should incorporate Table 4.6 of Bernard et al. (2011) that shows the relative contribution of Pacific cod to the groundfish prey field biomass is also minimal.

Response: Table 4.6 of Bernard et al. (2011) shows predicted and observed changes in vital rates and body condition of Steller sea lions under different prey conditions. Table 4.5 in Bernard et al. (2011) shows forage ratios based on combined pollock, Atka mackerel, and Pacific cod biomasses. Limitations with foraging ratios including those presented in Bernard et al. (2011) are discussed in Section 5.2.2.1.9. NMFS will not incorporate Table 4.6 of Bernard et al. (2011) due to the limitations with this kind of information as discussed in this section. Information is not available to determine the entire biomass of the Steller sea lion prey field or the portion that includes Pacific cod. Section 3.3.1 of the DEIS describes the stock status of Pacific cod, including the Aleutian Islands biomass.

CH5-74 Comment: The DEIS at 5-104 provides a list of problems NMFS believes are inherent with foraging ratios. However, the DEIS does not describe the methods the agency will use in the 2014 biological opinion to evaluate effects of fisheries on prey availability for Steller sea lions. The methods that will be used for the biological opinion need to be included as part of the methods used to assess each of the alternatives in the EIS to allow public comment on the methods and to make a reasoned decision when selecting a preferred alternative. The commenter raised concerns with specific aspects of the analytical approach for the 2014 biological opinion that was presented to the Council in June 2013 and asserted they should be addressed in the EIS.

Response: NMFS disagrees that the EIS needs to include the methods that may be used in a future analysis. The analysis in Chapter 5 of the DEIS includes the best scientific information available for the analysis of the effects of the alternatives to inform the selection of a preferred alternative. If the analysis in a subsequent ESA biological opinion on the proposed action changes the agency's conclusions about the effects of the fisheries on prey availability for Steller sea lions relative to the information in the EIS that is necessary for NMFS to make its final determination, then NMFS may include that information in the final EIS or may supplement the final EIS.

CH5-75 Comment: Provide assessment of the abundance, distribution, energy contribution, and seasonality of all Steller sea lion prey species in the Aleutians such as salmon, herring, sculpins, sand lance. Include changes in abundance and distribution of the prey field species over time. Include the

presence or absence of Steller sea lion feeding aggregations in the Aleutians and prey species involved. Determine the proportion of pollock, Pacific cod, and Atka mackerel in the entire prey field in the Aleutian Islands. Include the contribution of prey species that are not harvested by commercial fisheries in the Aleutian Islands (e.g., Irish lords, sand lance, myctophids, cephalopods, and flatfish) to the Steller sea lion nutritional and energetic needs. If the data is available for the Commander Islands, a similar analysis of the available prey field would be useful.

Response: The status of the prey potentially harvested by the Atka mackerel, Pacific cod, and pollock fisheries is described in Chapters 3 and 4. The status of the prey species is considered in the analysis of the effects of the fisheries on Steller sea lions in Chapter 5. Information about Steller sea lion prey, including species harvested by the fisheries and other prey species, is in Sections 5.1.1.5 and 5.2.2.1.1. Information is not available or obtainable with limited agency resources to understand the entire Steller sea lion prey field and to apply this information to the analysis of fishery effects in United States or Russian waters. Chapter 11 includes a description of studies recommended to understand the Atka mackerel and Pacific cod prey that may be available to Steller sea lions (e.g., Atka mackerel and Pacific cod tagging study). NMFS will implement these studies as resources allow and apply any new information to future analyses of fisheries effects on Steller sea lion.

CH5-76 Comment: Current fishery management may compromise the prey field and thus influence Steller sea lion foraging efficiency by shifting of the age/size distribution of the target stocks. Once a certain age-class or cohort of fish matures to the point where it recruits to the stock, or reaches a physical size where it is typically caught by the fishery, it is susceptible to fishing exploitation each year. The end result is that fishing reduces the prevalence of older, larger individuals in a stock, leaving behind a stock that is skewed toward younger, smaller individuals that may have less nutritional and energetic value to predators such as Steller sea lions.

Response: Section 5.2.2.1.2 in the draft EIS discusses the size of prey, including the concepts presented in this comment.

CH5-77 Comment: Current fishery management may compromise the prey field and thus influence Steller sea lion foraging efficiency by large reductions in groundfish biomass, reducing prey field density, or biomass per volume of water. This would potentially lower the encounter rate between Steller sea lions and their prey. Recent research has highlighted the importance of prey density, as opposed to prey abundance, to fur seals and seabirds in the Bering Sea Benoit-Bird et al. (2013). Like marine predators, fishermen often achieve the greatest yield per unit effort when targeting high-density aggregations of fish. Thus, the effect on the availability of high-density aggregations of prey to the predators may be even more important than the overall depletion or changes in range of a fish stock that is brought about by industrial fishing.

Response: Section 5.2.2.1.5 describes the potential effects of fishing on aggregations of prey and the potential effects on Steller sea lion foraging. NMFS agrees that high-density prey aggregations are important to Steller sea lion foraging success based on their foraging behavior. Although Benoit-Bird et al. (2013) was published after the DEIS completion deadline, their conclusions provide additional insight into the importance of prey aggregations also noted by studies cited in Sections 5.1.1.4.3 and 5.1.1.6, and the final EIS will include information in these sections from this reference.

CH5-78 Comment: NMFS also fails to address the critique of Bernard et al. (2011) that declines to rule out the “junk food” hypothesis as a possible explanation for the WDPS of Steller sea lion population decline. Bernard et al. (2011) find this hypothesis more consistent with the scientific data in the 2010 FMP biop than the “highly improbable” fishery-driven nutritional stress hypothesis. The hypothesis posits that fewer Steller sea lion pups are born because an oceanic climate shift has made high-energy

prey species less available, thereby causing pups to stay with their mothers for a longer time after birth until they are big enough to survive on low-energy prey alone. The agency analyzed this hypothesis in the 2010 FMP biop and concluded that it was highly unlikely that naturally caused nutritional stress was leading to population decline. Bernard et al. (2011) show that this theory cannot be ruled out because two of the five criteria necessary for the hypothesis—heavier pups and lower birth rates in the western and central Aleutian Islands—are established in the scientific record. The remaining three factors—relative size and weight of adult sea lions, duration of pup weaning in the western and central Aleutian Islands, and length of foraging trips by sea lions in the western and central Aleutian Islands—cannot be tested due to lack of data. The EIS must comply with NEPA by explaining the relevance of, and cost of obtaining, this missing data. NEPA further requires the agency to respond to the Bernard et al. (2011) opposing point of view and explaining how it impacts the agency’s analysis.

Response: The “junk” food hypothesis assumes that adverse effects may occur to Steller sea lions if they are unable to consume enough low energy prey to maintain life functions. Section 5.2.2.1.8 contains a discussion on nutritional stress, including various situations at different life stages that may result in nutritional stress, including the potential for nutritional stress for juveniles with high metabolic rates and consumption limitations. The consideration of the “junk food” hypothesis does not lead the agency to rule out the potential for fisheries effects on Steller sea lion and the need for fisheries management measures. The discussion and consideration of the “junk food” hypothesis in Section 5.2.2.1.8 uses the best scientific information available to understand the potential impacts of the alternatives.

CH5-79 Comment: Sinclair et al. (2013) includes a great deal of speculation about causes for regional Steller sea lion trend differences and completely new theories with questionable scientific support. The paper demonstrates a misunderstanding of current fishery regulations in Steller sea lion areas. No analyses support the assertions about the relationship between changes in diet and fisheries management. Nor is there anything in the report to support the speculation about how fishing and fisheries management are responsible for the changes in Steller sea lion diets. A legitimate peer review process would likely have caught these errors and questioned the assumptions. Instead, the AFSC released the paper as a NOAA Technical Memo. NOAA guidance regarding the use of technical memoranda states as a preface: “The National Marine Fisheries Service’s Alaska Fisheries Science Center uses the NOAA Technical Memorandum series to issue informal scientific and technical publications when complete formal review and editorial processing are not appropriate or feasible.” Whatever made a thorough, peer review inappropriate or infeasible we can only speculate in light of the apparent import of this paper to this DEIS. An independent analysis should be undertaken that statistically evaluates possible relationships between diet, fishing, climate conditions, and changes in sea lion numbers. It needs to evaluate the relationships in light of the leading hypotheses to explain the decline of Steller sea lions. There are several concerns with the Sinclair et al. (2013) paper referenced in the DEIS. Comments should be incorporated into a revised Chapter 5 and responded to in NMFS’s response to comments. We further recommend either that the Sinclair paper be significantly revised to address these concerns and then submitted for standard outside peer review and publication, or deleted altogether as support for the conclusions of the EIS. This paper should not be used in the EIS or the upcoming biological opinion unless these steps are taken.

1. The paper concludes that changes in prey frequency in scats may be attributable to regulations on fishing to protect Steller sea lions. However, the actual data seems to better support the changes being attributable to environmental factors.
2. Closures referred to in the paper as “no trawl zones” actually only apply to fisheries targeting pollock, cod, and Atka mackerel. The paper states that because offshore pelagics such as salmonids and myxophids are not found in the Steller sea lion scats that have been collected, female Steller sea lions must be nearshore feeders. However, other Federal, state, and fisheries data show something quite different for adult female Steller sea lions.

3. The paper also states that Steller sea lion scat data would include offshore pelagics if they were consumed, because Steller sea lion foraging trip duration is less than digestion time for those species. Distance to deep basin waters and back is only a factor if foraging trips are direct, which clearly is not the case from the available telemetry data for female Steller sea lions.
4. The theory that Steller sea lions are adapted to eat the foods available to them in their local area is not supported by any data.
5. The paper focuses on only one explanation for correlating diet and Steller sea lion trends rather than considering the relative change in particular prey species.
6. The report should also have noted that the change in diet corresponds to a change in the Pacific Decadal Oscillation (1999) that likely affected the relative abundances of species consumed by Steller sea lions. The report needs to list the species and provide some discussion of the changes and whether they are important.
7. The paper states that “It was not the objective of this study to define the relationship between Steller sea lions diet and population decline, ...” and yet the discussion and conclusions of the paper speculate about how anthropomorphic factors could be related to Steller sea lion declines.
8. The paper also speculates that reduced bottom trawling may be a factor in why Steller sea lion recovery has occurred in some areas, but ignores that on-bottom trawling occurs widely in areas where Steller sea lion recovery is occurring and the management steps (including gear modifications and habitat protection areas) in place to manage benthic effects of trawls in the Aleutian Islands, Bering Sea, and Gulf of Alaska.

Response: NMFS disagrees with the commenter. The information used in the DEIS meets the Information Quality Act standards used by the Agency in the dissemination of information and the review procedures used by the Alaska Fisheries Science Center for public release of information. Sinclair et al. (2013) analyses the best scientific information available on frequency of occurrence of prey in Steller sea lion diets by region, season, and among decades and was peer reviewed. The DEIS references data and conclusions in Sinclair et al. (2013) on frequency of occurrence of prey items in sea lion diet by season and changes in the frequency of occurrence of fish species in the sea lion diet from 1990 through 1999 compared to 2000 through 2009. The analysis in the DEIS on the effects of fisheries on sea lion prey does not include the discussion in Sinclair et al. (2013) about any potential role of fishing and fisheries management causing the changes in Steller sea lion diets.

CH5-80 Comment: The EIS should provide greater detail on the use and limitations of scat frequency of occurrence (FO) to describe the contribution of various prey species to the Steller sea lion diet. Inferring a Steller sea lion’s diet using the FO method provides a biased review of the animal’s diet. NMFS fails to address this bias in the DEIS. The DEIS should provide a summary and results (wherever possible) of other, emerging methods to assess Steller sea lion diet (e.g., fatty acid analysis). The EIS should provide an updated estimate of FO for Pacific cod, pollock, and Atka mackerel in Steller sea lion scat that is corrected for bias and includes the distribution of the lengths of prey. The DEIS should provide finer scale information on Atka mackerel fishery length, which is available in the 1998 biological opinion. Scat samples collected in April should be attributed to “summer” similar to telemetry data.

Response: Sections 5.1.1.5 and 5.2.2.1.1 describe Steller sea lion food habits and diet based on the best scientific information available. These sections review the analysis of diet using frequency of occurrence in scats, including limitations of this method, and provide a discussion of comparative diet studies using fatty acids, stable isotopes, and genetics. Length of prey will be added to Section 5.2.2.1.2 in the final EIS. Seasons for scat groupings is based on breeding seasons. Telemetry data are divided by quarters to make it comparable to fisheries and juvenile movements. Data are grouped based on the needs of the respective data types and analyses.

CH5-81 Comment: Current fishery management may compromise the prey field and thus influence Steller sea lion foraging efficiency by changing the spatial and temporal distribution of fish stocks. At reduced population density, a fished stock's distribution may contract, reducing sea lion foraging efficiency at the edges of the distribution and causing Steller sea lions to contract their foraging range. Alternatively, fished stocks may contract their distribution based on habitat characteristics—assuming an ideal free distribution—and at lower density may contract to areas of primary habitat preference over secondary ones. If important Steller sea lion rookeries or haulouts overlap spatially with these secondary fish habitat areas, the outcome could be declines in foraging success and population status in or near the fished stock's secondary habitat. Finally, intense fishing pressure may result in gaps or holes in the distribution of the fished stock that persist for some time, especially for patchily distributed species like Atka mackerel, that return to multiple spawning grounds each year. This would result in localized depletion of prey, with prey patches that are fewer and farther between.

Response: Section 5.2.2.1 discusses how the fisheries may cause localized depletion of Steller sea lion prey.

CH5-82 Comment: The DEIS provides no quantitative comparative distribution of fishing depths (by fishery) and Steller sea lion dive depths. For the most part, the DEIS in Chapter 5 and elsewhere (Chapters 3 and 7) presents dissimilar data sets from which the actual extent of overlap cannot be estimated. Despite public comment requesting proportional distribution of dive depths by Steller sea lions, the DEIS persists in focusing on maximum diving depth and maximum dive duration.

The DEIS does not provide a balanced presentation of the available information by quantifying only the extreme end of the range in the text for juveniles and adult females. For example, the DEIS omits the mean dive depth for juveniles indicating that the average juvenile dive is short and shallow and close to shore. The DEIS fails to include in the text discussion the studies in the Aleutian Islands showing the mean diving depth and mean dive duration for adult females.

Response: Chapter 3 provides the location of Atka mackerel and Pacific cod catch in relation to the 200 meter bathymetry in Figures 3-5, 3-6, and 3-9 through 3-16. This information was not available for pollock. Section 5.1.1.6 described the at-sea habitat use by Steller sea lions including dive information. The depth of foraging and fishing is described in Section 5.2.2.1.3 providing mean depths and durations in the tables that accompany the text. Whether mean sea lion depths necessarily reflect depths at which foraging occurs (described in Section 5.1.1.6) is questionable; however, all foraging must occur within the limits set by the maximum dive depths.

CH5-83 Comment: In 2006, NMFS Alaska Region asked for assistance on the question of updating overlap of size of prey. In its "Request for assistance on ESA Section 7 consultation," NMFS asked in question #24: "Is there size overlap between sea lion diet and fishery catch? Provide length distribution of fishery catch (by season) for pollock, Pacific cod, and Atka mackerel. Update Figure 40b in the 1998 biological opinion for pollock, Pacific cod, and Atka mackerel." NMFS did not complete this task in the response to questions (NMFS 2006) for the 2010 draft and final biological opinion. Nor has NMFS completed this quantitative update for the DEIS despite extensive public comment and scientific criticism. Despite these pointed criticisms (as well as extensive public comment), the analytic approach laid out by NMFS (May 2013) repeats another non-quantitative "yes/no" exposure analysis (from NMFS 2000 biological opinion) and then states at page 6: "From this analysis, NMFS determined that the groundfish fisheries were likely to compete with Steller sea lions for Atka mackerel, Pacific cod, and pollock (NMFS 2000). Given the best available information today, NMFS maintains that the fisheries are likely to compete with Steller sea lions for fish and thus the focus of the 2014 biological opinion will be on the fisheries for these three species."

Response: Section 5.2.2.1.2 of the DEIS discusses the extent of size overlap between fish in the Steller sea lion diet and fish caught in the groundfish fishery. Section 5.2.2.1.2 describes research that found considerable overlap between the size of pollock and Atka mackerel taken by sea lions and the fishery. NMFS agrees that information on the size of Pacific cod caught in the fisheries and eaten by sea lions should be included in Chapter 5, and NMFS will revise the final EIS with this information. NMFS presented an errata to the Council in June 2013, that revises the sentence referenced by the commenter such that it reads as follows, “Given the best available information today, NMFS maintains that the fisheries may compete with Steller sea lions for fish and thus the focus of the 2014 biological opinion will be on the fisheries for these three species.”

CH5-84 Comment: The analysis in Chapter 2 fails to review or quantify the effects of ongoing closures of pollock under Alternative 1 with respect to the overall prey field for Steller sea lions. The DEIS at 2-6 has a discussion of Aleutian Islands pollock management, but neither this discussion, nor the discussion of pollock in Chapter 5 present any data regarding the effect of the closure on pollock stocks or the effect on pollock availability to Steller sea lions as prey. Neither Chapter 2, Chapter 3, nor Chapter 5 provide data on the amount of pollock that remained in the water and were available as prey for Steller sea lions. This information should have been included in order for the reader to weigh the effects of pollock measures under each alternative.

Response: Chapter 2 is a description of the alternatives rather than an analysis of effects of the alternatives. Chapter 3 is the analysis of the effect of the alternatives on target species stocks, including pollock (Section 3.4). Section 3.4.1 provides a summary of historical changes in acceptable biological catch (ABC), total allowable catch, and catch showing an increase in pollock ABC since the closure of the fishery in the late 1990s. Section 5.2.2.4 of the DEIS provides a discussion of the effects of the pollock fishery under Alternative 1 on Steller sea lion prey resources. NMFS agrees that more pollock is potentially available to Steller sea lions with the fishery closure than with the fishery open. Table 5-35 provides the amount of critical habitat closed to directed pollock fishing, showing where pollock would not be harvested in critical habitat by area under Alternative 1. Considering the harvest of pollock is primarily from critical habitat and pollock appears to occur primarily inside critical habitat, Table 5-35 provides the potential effect of the harvest of pollock under Alternative 1 on Steller sea lion pollock prey availability. Similar tables were provided under the action Alternatives 2 through 5 (Tables 5-52, 5-67 through 5-69, and 5-80). In consideration of the Aleutian Islands pollock ABC shown in Figure 3-17, these tables in Section 5.2.2.4 give an estimate of the pollock that remains in the water and available to Steller sea lions under the alternatives.

CH5-85 Comment: The EIS needs to re-evaluate the basis for the determination that the Pacific cod fisheries are a “fishery of concern” as the initial determination is based on frequency of occurrence in scat that is subject to bias and overestimates the importance of gadids in Steller sea lion diet. Based on 1990 to 2005 data, scat analyses indicate that Pacific cod is at best a minor component of sea lion diets from information given in the 2010 FMP biop.

Response: The DEIS continues to identify Pacific cod as a principal prey species based on frequency of occurrence in scat data as described in Section 5.2.2.1.1. Taking into account the limitations of this type of data described in Section 5.1.1.5, frequency of occurrence data remains the best estimation of diet for free ranging pinniped species. Pacific cod occurs in over 10 percent of the scats in the Aleutian Islands in the winter (Table 5-19), and therefore, remains a fishery of concern for Steller sea lions.

CH5-86 Comment: The DEIS does not provide an analysis of the effects of Alternative 4 on the availability of prey to Steller sea lions, or why Alternative 4 fails to meet ESA requirements given new information available since the 2010 FMP biop was completed. Yet, NMFS has already provided verbal commentary to the Council that strongly indicates that Alternative 4 is unacceptable. To be complete and

objective, and in order for the public to provide meaningful comment on each of the alternatives, the DEIS needs to be modified to include NMFS's analysis of the effects of fishing on Steller sea lions under each alternative. With regard specifically to Alternative 4, NMFS needs to document and quantify the effects of fishing on prey availability under Alternative 4 management measures. There is over a decade of data on which to base an estimate of these effects, but no such analysis is provided. Chapter 2 (and possibly Chapter 5) needs to include this analysis and clearly document how the management measures in Alternative 4 do not provide a sufficient prey field for the WDPS of Steller sea lions, if that is the agency's conclusion.

Response: The analysis of effects of the alternatives on prey availability is in Sections 5.2.2.2 through 5.2.2.6. Chapter 2 is a description of the alternatives, rather than an analysis of their effects. This analysis uses the best available information to describe the potential effects of all the alternatives on Steller sea lion prey availability. The effects are described in context of the performance standards (Section 1.10.3) that are likely to be used in an ESA consultation. In June 2013, NMFS provided a review of the Council's preliminary preferred alternative in relation to the performance standards described in the DEIS. NMFS has not made an ESA determination on any of the alternatives at this time.

CH5-87 Comment: The DEIS identifies the importance of Pacific cod in Steller sea lion diet as an area of controversy, however, Section 5.2 does not include information on the size distribution of cod occurring in Steller sea lion scat or harvested in the Aleutian Islands cod fisheries. This size distribution information is available in existing NMFS documents and public comment, and should be included in Chapter 5. For example, a draft EA prepared by NMFS in 2000 on Interactions between the Pacific Cod Fisheries in the Bering Sea, Aleutian Islands, and GOA and Steller sea lions stated that the mean size of Pacific cod eaten by Steller sea lions was approximately 50 cm in length.

Response: The DEIS uses the best scientific information available to describe Pacific cod prey for Steller sea lions. Pacific cod is among the top prey items in two decades of diet data from the GOA through the western Aleutian Islands with highest frequencies occurring in winter. In Section 5.1.1.5, the estimated size of Pacific cod in Steller sea lion scat is listed along with walleye pollock and is approximately 60 cm. Sections 5.1.1.5 and 5.2.2.1.1 will be revised in the final EIS to include more information on Pacific cod eaten by Steller sea lions from Sinclair et al. (2013), which is cited as Sinclair et al. (draft) in the draft EIS, and from (McKenzie and Wynne 2008), which has information on Pacific cod prey size in the GOA. Additional information on Pacific cod prey size would need to be considered with the confounding issues with prey size discussed in Section 5.2.2.1.2.

Recovery

CH5-88 Comment: Compare the most recent estimate for total population in the U.S. WDPS of Steller sea lions to the best estimate for total U.S. WDPS population in 2000. Compare the most recent estimate for total U.S. WDPS population to the downlisting population criteria of 53,100.

Response: Section 5.1.1 discusses the Steller sea lion population as it relates to the recovery plan, and Section 5.1.1.2 provides the most recent population estimates for the WDPS of Steller sea lions from 1990 to 2012. The current total population estimate for the U.S. portion of the WDPS is approximately 52,200 animals compared to 42,500 animals estimated in 2000. The 2008 Recovery Plan for Steller sea lions has several delisting criteria including estimated total population based on non-pup counts and non-pup population trends in sub-regions. One criterion is the statistically significant increase in the U.S. WDPS population for 15 years on average based on non-pup counts. If the population had a 1.5 percent increase from 2000, the population was projected to be 53,100 animals in 2015. The action analyzed in the DEIS is not to downlist Steller sea lions, but the adoption of fishery management measures to insure the Alaska groundfish fisheries are not likely to jeopardize the continued existence of Steller sea lions or

adversely modify or destroy their designated critical habitat. Section 5.1.1.1 will be revised to mention the total population estimate from 2000 and the criterion from the recovery plan for the total U.S. WDPS population to be estimated at 53,100 animals by 2015 based on slow, steady population growth from 2000.

CH5-89 Comment: Clarify that the 42,500 population reference in the Recovery Criteria is the total population estimate for the U.S. WDPS of Steller sea lions in 2000 (and not the non-pup population as is currently stated). Provide the methodology used to arrive at the 42,500 population estimate in the Recovery Plan for the U.S. WDPS (from the population viability analysis in the recovery plan).

Response: The 2008 Recovery Plan for Steller sea lions is incorporated by reference in the DEIS and discussed in Sections 1.9.4 and 5.1.1. Those sections focus on aspects of the recovery plan that inform the analysis. The action analyzed in the EIS is protection measures to insure the groundfish fisheries are not likely to jeopardize the continued existence of Steller sea lions or adversely modify or destroy their designated critical habitat. Section 5.2 describes the methods used to analyze the effects of the alternatives on Steller sea lions, which do not use historical population estimates. The methodology for developing the population estimate in 2000 from the recovery plan is outside the scope of the analysis of the effects of the alternatives as this type of information is not used in the analytical methods described in Chapter 5.

Uncertainty/lack of information

CH5-90 Comment: The EIS should clarify how NMFS can rationally determine the impact that an action will have on the human or natural environment when it cannot even establish that any impact even exists. Indeed, the relevance of the precise role that humans have played in the decline of the Steller sea lion is at the crux of the decision to restrict fisheries.

Response: NMFS uses the best scientific information available to determine the potential impacts on the human environment and describes the information and method of analysis used in each chapter for the environmental components (Chapters 3 through 7) and social and economic effects (Chapters 8 through 10). When information does not allow the effects to be determined, the DEIS explains that the effects are unknown. The analysis in Chapter 5 is based on Steller sea lion biology and potential direct and indirect effects of the fisheries on Steller sea lions. The method of the analysis of the effects on Steller sea lions is explained in Section 5.2.1 for incidental takes, Section 5.2.2 for prey availability, and Section 5.2.3 for disturbance.

CH5-91 Comment: The DEIS does not analyze all significant issues and information relevant to the proposed action and effects of the alternatives on Steller sea lions, the environment, and Alaska communities, as required by NEPA. Although the DEIS references the two reviews of the 2010 FMP biop, no genuine or detailed attempt is made in the DEIS to address the issues raised in the reviews or the public comments received on the draft and final 2010 FMP biops. The DEIS does not address the conclusion of those reviews that there is no scientific support for commercial fisheries jeopardizing Steller sea lions through competition for prey, resulting in nutritional stress and reduced natality. Anything short of a full and fair analysis of all of the information and issues set forth in the reviews of the 2010 FMP biop will result in NMFS once again violating NEPA. Additional analyses must be performed to address the issues raised in the reviews of the 2010 FMP biop. The DEIS should contain a stand-alone section addressing the conclusions of the 2010 FMP biop, the recommendations of the reviews, and the Agency's response to each controversial issues and uncertainty identified by the reviews. NMFS's mistaken rationale is that the analyses are applicable only in the forthcoming Section 7 consultation and that if the Section 7 process generates new information, NMFS will evaluate the need to prepare a

supplemental draft EIS at that time. Deferring analysis of relevant and contrary scientific information violates fundamental NEPA principles. A thorough EIS must be completed before a decision is made.

Response: NMFS disagrees that the DEIS does not analyze all significant issues and information relevant to the proposed action and effects of the alternatives on Steller sea lions, the environment, and Alaska communities. Chapters 3-7 analyze all significant issues and information relevant to the proposed action and the human environment, including Steller sea lions. Impacts on Alaska communities are analyzed in Chapters 8 and 10. NMFS used the best scientific information available, including information from the reviews of the 2010 FMP biop, to inform the analysis of the potential effects of the alternatives on the human environment. Chapter 5 addresses portions of the reviews of the 2010 FMP biop that informed the analysis used in the EIS for the effects of the alternatives on Steller sea lions prey resources in Section 5.2.2.1.9. The DEIS analyzes the issues relevant to informed decision making on the alternatives, based on the best scientific information available, and incorporates the issues identified in the reviews as appropriate and documents these in the DEIS. NMFS is still in the process of conducting appropriate analyses in response to external reviews of the 2010 FMP biop. NMFS does not know at this time whether these additional studies are likely to change the agency's understanding of the potential effects of fisheries on Steller sea lions. This cannot be determined until these studies are completed. Until such time, NMFS will continue to work with the Council to identify a preferred alternative for completion of the EIS within the schedule ordered by the U.S. District Court for the District of Alaska. Resolving scientific uncertainty and refining methods for data analysis are continual processes, and NMFS is always improving the information available on all of the issues under NMFS's responsibility. However, NMFS recognizes the need to assess the data and analyses available today to make timely decisions. NEPA accommodates the fact that information evolves by establishing the guidelines for when to supplement an EIS and how to address incomplete and unavailable information.

CH5-92 Comment: NMFS fails to insure the scientific integrity of the DEIS. NMFS states that it used the best science available to inform its decision that continued closures and restrictions would prevent jeopardy of the WDPS of Steller sea lions. However, this decision is contradicted by the agency's statement that "NMFS does not have the information to precisely ascribe the amount to which human and natural factors are contributing to the decline in Steller sea lions in the Central and Western Aleutian Islands. Moreover, insufficient information exists to quantify Steller sea lion population effects with various levels of fishing" (DEIS 5-69). Thus, the best science available to NMFS cannot establish that fisheries are causing a decline in the WDPS population, or that if they were, a certain amount of restriction would remedy the effect. The document contains few actual conclusions about whether human or natural factors are resulting in population effects on the Steller sea lion WDPS. Instead, it admits that "insufficient information exists to quantify Steller sea lion population effects with various levels of fishing" (DEIS 5-63). This leaves both the Council and the public with no way of knowing what NMFS analyzed or how it reaches its conclusions in the DEIS. As the Council notes in its June 2013 motion, "whether such a significant negative impact on Steller sea lions from the groundfish fisheries exists is as relevant under NEPA as it is under the ESA," and therefore must be addressed in the EIS. The best science available to NMFS cannot establish that fisheries are causing a decline in the WDPS population, or that if they were, a certain amount of restriction would remedy the effect. The agency's determination that closures and restrictions are necessary therefore does not and cannot plausibly follow from its conclusion that the available science does not establish whether or to what extent fisheries are affecting Steller sea lions.

Response: NEPA requires that environmental information is available to public officials and citizens before decisions are made and before actions are taken. In Section 5.2.2.2, the DEIS identifies the type of information that is available to analyze the effects of the alternatives on Steller sea lion prey availability and provides the reasons why most analyses in the EIS are qualitative, and not quantitative. When information was available to quantify difference among alternatives (e.g., amount of catch inside critical

habitat under the alternatives) that information was provided. A qualitative analysis based on the best scientific information available to describe the potential impacts of the alternatives allows decision makers to compare and contrast the effects to inform choosing a preferred alternative. The DEIS clearly explains the methods and assumptions used in the analysis and how the conclusions in the DEIS were reached. Chapter 5 details the incomplete and unavailable information that prohibits a full quantitative analysis of the effects of fishing on Steller sea lions. The DEIS provides an analysis that allows the decision makers to understand the different level of effects expected from the alternatives on Steller sea lions and to understand those effects based on performance standards from the 2010 FMP biop and as modified based on the reviews of the 2010 FMP biop. Please see the response to comments on population effects analysis under Chapter 5 for further information.

CH5-93 Comment: The public is left with the impression that NMFS intends to counter the reviews of the 2010 FMP biop based on further work that is in various stages of completion. In so doing, rather than basing the discussion on peer-reviewed scientific information, NMFS describes a set of unpublished and in-process or soon-to-be-in-process studies, some of which have not even been started. This is inconsistent with the standard set by 40 CFR 1502.24. It appears that the agency is developing new theories on how fisheries may affect Steller sea lions without regard to the weight of scientific evidence in the literature. Rather than fairly evaluating alternative expert opinions, the public is left with the impression that the agency's mind was already made up on the central issue of whether there are reasonably foreseeable significant adverse environmental impacts from fishing—the exact opposite of what NEPA requires.

Response: NMFS disagrees that the information provided in the EIS does not comply with 40 CFR 1502.24. In the DEIS, NMFS used the best scientific information available, including the reviews of the 2010 FMP biop and information that has become available after the completion of the 2010 FMP biop. Some of this information is from peer reviewed publication and some is from AFSC researchers. Information from AFSC was reviewed to ensure the information released meets the agency standards for the particular type of information under the Information Quality Act and followed AFSC procedures for review and release of information. NMFS has identified issues from the reviews of the 2010 FMP biop that will need additional analyses by the agency, prioritizing the work by the available resources and the need of the information to better understand the potential effects of the groundfish fisheries on Steller sea lions. Chapter 5 describes the methods used to analyze the effects of the alternatives on Steller sea lions, which do not use the type of information that would come from the additional analyses of issues raised by the reviews of the 2010 FMP biop. NMFS will take a hard look at all of the information provided, from its own scientists as well as from outside sources, and make appropriate determinations based on that information for its statutory responsibilities under the Magnuson-Stevens Act and the ESA.

CH5-94 Comment: NMFS has not taken a hard look, as required under NEPA, at the issue of whether fisheries compete with Steller sea lions. No direct, conclusive, or strong evidence exists in the 2010 FMP biop that fisheries compete with Steller sea lions in the central and western Aleutian Islands and elsewhere, as shown by the reviews of the 2010 FMP biop, including the CIE, the State sponsored scientific review panel, and Dr. Ian Boyd. In Section 5.2.2 of the DEIS, NMFS makes many conclusory, albeit non-definitive, statements to this effect, without providing scientific support.

Response: NMFS disagrees that it did not take a hard look at the issues identified in the EIS. A hard look at the information requires NMFS to include the best available information in the DEIS and to thoroughly consider that information when making a determination. Chapter 5 contains the best scientific information available related to fishery competition with Steller sea lions. In April 2013, the Council's Scientific and Statistical Committee found the DEIS analysis to be not only a balanced treatment of the

issues that provides the reader with a full picture of the strengths and weaknesses of the data available, but an excellent compendium of information on the interactions of fishing and Steller sea lions.

CH5-95 Comment: Instead of disclosing in the DEIS the fact that numerous studies since 2000 have looked for and failed to find statistically significant relationships between Steller sea lions and groundfish fishing under previous mitigation measures (Alternative 4), the DEIS inaccurately relies on “data gaps”—e.g., “gaps” that the agency sees because it cannot find a study that supports its hypothesis of chronic nutritional stress caused by prey removals. An EIS must contain “a reasonably thorough discussion of the significant probable environmental consequences” of a proposed action and the alternatives to the action. This requires an agency to evaluate what impacts are likely, not to engage in a relentless search for negative impacts in the face of credible scientific information, which supports a conclusion that such negative impacts do not exist. Unfortunately the “looking for adverse impacts in the absence of indicators of such impacts” approach is exactly the approach taken in Chapter 5 and throughout the DEIS. This alone compels substantial revision of Chapters 2 and 5 to provide rigorous and objective information for the public and the Council.

Response: The impetus for the action analyzed in the DEIS was the conclusion of NMFS’s 2010 FMP biop that it could not insure that the groundfish fisheries, as authorized in 2010, were not likely to jeopardize the continued existence of the WDPS or adversely modify designated critical habitat. Thus, it is appropriate for the DEIS to consider potential effects of the alternatives with consideration of the findings and information used in previous biological opinions. Chapter 2 is the description of the alternatives. Chapter 5 provides the types of information available related to potential effects of the alternatives on Steller sea lions, including the differing viewpoints on whether fisheries have an effect on Steller sea lions and their critical habitat.

CH5-96 Comment: NMFS must revise its performance standards in light of the new information in the reviews of the 2010 FMP biop. NMFS believes Alternative 1 is not likely to jeopardize Steller sea lions or adversely modify their critical habitat based on its performance standards. However, these performance standards are not based on the most current information available. NMFS states that “no additional new information was identified during scoping on this EIS that would lead to different performance standards” (DEIS 1-21). In fact, NMFS identified reviews of the 2010 FMP biop as new information. These reviews challenge the premises underlying the performance standards, and necessitate the creation of new standards. NMFS has an independent obligation under NEPA to evaluate the effects of its proposed action on listed species and their critical habitats. The agency must do so in the EIS by considering whether the performance standards are reflective of the relationships between listed species and their prey, and whether they need to be modified in light of the voluminous additional data received after the 2010 Environmental Assessment. NMFS evaluate the performance standards in light of the incomplete or unavailable information documenting the relationships that form the hypotheses and premises on which the performance standards are based. This includes the hypothesis that Steller sea lions are prey-constrained or nutritionally-constrained in the sub-areas where the population may not be recovering or growing as rapidly as previously was anticipated.

Response: The performance standards from the 2010 FMP biop were analyzed and modified based on information in the reviews of the 2010 FMP biop and used in the DEIS to inform the analysis (Section 1.10.3). Section 5.1.1 and 5.2.2.1.9 include the discussion of the types of studies that have been conducted or that are in progress or planned under the topics related to Steller sea lion biology and fisheries interaction. Additional research to further understand the impacts of the fisheries on Steller sea lions is identified in Chapter 11. As new information becomes available, NMFS will continue to evaluate the performance standards used to determine appropriate fisheries management measures to protect Steller sea lions and their critical habitat.

CH5-97 Comment: The DEIS fails to address significant data gaps. While the agency purports to list areas of scientific uncertainty and speculation, it neglects to explain how the available data establishes that human or natural factors are resulting in population effects on the Steller sea lions.

Response: The DEIS identifies the gaps and quality of scientific information following the CEQ regulations at 40 CFR 1502.22. In the Executive Summary, NMFS identifies the areas of controversy and the issues to be resolved. Under Areas of Controversy, NMFS explains that the DEIS identifies where information is lacking, discusses the relevance of the unavailable information, summarizes existing credible scientific evidence relevant to adverse impacts on Steller sea lions, and evaluates impacts based on scientific approaches. As described in Chapter 5, NMFS does not have the information to precisely ascribe the amount to which human and natural factors are contributing to the decline in Steller sea lions in the Central and Western Aleutian Islands. Moreover, insufficient information exists to quantify Steller sea lion population effects with various levels of fishing. The cost of obtaining sufficient information to fill in the current unknowns, given the unprecedented amount of research (\$241 million from fiscal year 1992 to fiscal year 2011) directed toward understanding the causes of the Steller sea lions' decline and lack of recovery is beyond the resources now available to the agency under present fiscal conditions. Research activities are prioritized and conducted within available resources. This DEIS also identifies future research, including modeling Steller sea lion predator-prey interactions, food web modeling and diet studies, focal studies of Steller sea lion foraging behavior, Steller sea lion diet, fish abundance, fish movement, oceanography, ocean productivity, and fisheries impacts in contrasting areas of Steller sea lion population trends and in areas where Steller sea lions forage. This work will enable NMFS to better understand the interactions between fisheries and Steller sea lions and will be conducted as resources allow.

CH5-98 Comment: The DEIS contains an inadequate discussion of the reasons for and implications of its incomplete data, as required by NEPA. NMFS admits that it does not have sufficient data to determine whether the proposed action will have significant adverse effects, and it relies on the purportedly exorbitant cost of obtaining the data as an excuse for not doing so. However, the agency fails to explain what costs would be necessary to make an informed decision regarding the potential impacts that humans may have on the Steller sea lion population. It must demonstrate that the cost of obtaining the necessary missing information is exorbitant and explain the relevance of the missing information.

Response: Chapter 11 of the final EIS will be revised to include a summary of the types of research that would further inform the effects of the fisheries on Steller sea lions and the estimated costs of doing this type of research and which projects are funded and are scheduled. There are many questions to answer to understand the potential effects of groundfish fisheries on Steller sea lions that can be explored through either smaller focused studies (e.g., Atka mackerel tagging) or large multidisciplinary studies (e.g., adaptive management experiment). The small scale studies may provide limited, focused answers that may be used to piece together the bigger picture of potential fisheries effects. Whether small scale or large studies, the available resources and priorities for fisheries and Steller sea lion research affect the capability to obtain information that can be used to understand fisheries effects on Steller sea lions. For example, there have been at least four previous attempts over the last 15 years to design an adaptive management experiment to examine the potential indirect effects of commercial groundfish fisheries on the WDPS of Steller sea lions. One approach involved the establishment of one or more paired treatment and control areas that were open and closed to fisheries, respectively. The proposed experimental durations were all quite long, ranging from 5 to 20 years depending on the model design and assumptions. This was because all of the experiments used population-level responses, which could take a long time to manifest due to the long 10-year generation time of Steller sea lions, and their relatively "plastic" life history involving variable duration of maternal dependence of young. The success of any adaptive management experiment depends on how well the size, number, and location of treatment and control areas incorporated knowledge of Steller sea lion biology, seasonal movements, foraging ecology, and

stock structure. This would require relatively large treatment and control areas across the entire Alaskan range of the WDPS in order to capture as much of the seasonal and ontogenetic movements as possible. No adaptive management experiments have been implemented, largely because of the high costs to NMFS and the groundfish fishing industry.

CH5-99 Comment: NMFS expresses the opinion that the State-sponsored scientific review panel review of the 2010 FMP biop is invalid. The concern here is that NMFS is taking issue with the reviews of the 2010 FMP biop conclusions without having even presented or evaluated the studies on which they are based, while at the same time basing much of the analysis in Chapter 5 on incomplete studies or in-house reports that have not been evaluated or peer reviewed. This demonstrates a callous disregard for the scientific process, and certainly calls into question the objectivity of the analysis in Chapter 5 and the agency's compliance with the standard set by 40 CFR 1502.25(a).

Response: Nowhere in the DEIS does NMFS provide the opinion that Bernard et al. (2011) is "invalid." NMFS has carefully reviewed the Bernard et al. (2011) report and considered its findings in the analysis in Chapter 5. The results of Bernard et al. (2011) are being further evaluated by NMFS, as explained in Section 5.2.2.1.9. NMFS used the best scientific information available to support the analysis and presented findings on both sides of the controversy on whether groundfish fisheries have an effect on Steller sea lions. The DEIS describes the types of information used, including published studies, technical memorandum, and other agency data so the reader is able to understand the type of information used in the DEIS. All information used meets the Information Quality Act and AFSC procedures for the release of agency information, ensuring scientific integrity.

CH5-100 Comment: The 2001 reasonable and prudent alternative (RPA) from the 2001 FMP biop is not a valid adaptive management experiment for two reasons:

1. When the 2001 RPA was implemented, Steller sea lion sub-area population declines were occurring at approximately the same rate as current rates on both sides of 178° west longitude.
2. Atka mackerel fishing was not occurring east of 178° west longitude in Area 542 prior to 2001 and Atka mackerel fishing west of 178° west longitude in critical habitat continued at a somewhat lower level. The curtailment of Atka mackerel fishing east of 178° west longitude was only a "paper" regulation.

Response: While the fisheries management measures in the Aleutian Islands were not specifically designed as an adaptive management experiment, the information gathered after the implementation of these fisheries can inform consideration of changes to fisheries management. Working with the Council, fishery management measures can be adapted to changes in fishing behavior or changes in Steller sea lion population trends and based on new information related to the Aleutian Islands ecosystem. The movement of Steller sea lions and adaptive management studies in relation to fishing (Punt and Fay 2006) is mentioned in Section 5.1.1.4.3. An adaptive management experiment to address Steller sea lions and groundfish fishing in the Aleutian Islands has not been designed or implemented for the groundfish fisheries.

CH5-101 Comment: For each of the alternatives, in cases where NMFS is unable to provide a comprehensive analysis of predicted effects of fishing activity on Steller sea lion foraging and survival, provide a description of important information that is needed but lacking, and how NMFS plans to acquire such information. It is important to fill these data gaps, or at the very least, recognize they exist and lay out a plan to fill them. Without sufficient data, there is no way to determine what effect the proposed measures will have on the spatial distribution of stock biomass of prey species and its relationship to Steller sea lion foraging success. In other words, no matter which alternative NMFS

chooses, it has little basis for assessing the impacts to Steller sea lions without better information and dedicating more resources to studying fish stocks in the western and central Aleutian Islands and Steller sea lion vital rates and foraging patterns.

Response: Chapter 11 discusses the research needs to further understand fisheries management and the potential effects of fisheries on Steller sea lions. Section 11.1.1 describes the fisheries research that will provide a better understanding of the abundance and distribution of potential prey species that are harvested in the groundfish fisheries. Section 11.1.2 provides a discussion of the research needed to understand predator-prey relationship for Steller sea lions, fisheries interactions, and diet and food web modeling. All research activities are dependent on priorities and funding.

Since Atka mackerel is the main prey item of Steller sea lions in the Aleutian Islands, Atka mackerel tagging studies have been conducted in the eastern and central Aleutian Islands to examine local abundance around rookeries and major fisheries locations. Currently NMFS in collaboration with the North Pacific Fisheries Foundation is conducting a study in the central Aleutian Islands and is funded to conduct a study in the western Aleutian Islands in 2014-2015 (as referenced in 11.1.1.3). These studies will examine Atka mackerel abundance and the relative abundance of rockfish, pollock, and Pacific cod at local scales relevant to the sea lions and the fishery. In addition, during the Atka mackerel recovery studies, NMFS is planning to conduct small acoustic surveys in the areas where tagged sea lions have been foraging to examine abundance of rockfish, pollock, and Pacific cod. Section 11.1.1.3 will be revised in the final EIS to indicate that this study is funded and now scheduled.

Chapter 7 Comments

These comments are on Chapter 7, ecosystem analysis. The comments on Chapter 7 were primarily related to multispecies modeling and predator/prey relationships.

CH7-1 Comment: A 10 percent reduction in Atka mackerel mortality leading to a 6 percent increase in sea lion biomass based on Aydin (2010) was not explained in the 2010 FMP biop. Further discussion in the EIS should include:

- a. Address how to reduce Atka mackerel rates the additional 2 percent beyond the closure of the Atka mackerel fishery (8 percent) to reach the modeled 10 percent.
- b. How many years would it take to reach the 6 percent increase in sea lion biomass?
- c. Would the increases in biomass persist (for sea lions and Atka mackerel)?
- d. What would be the effect of closing both the Pacific cod and Atka mackerel fisheries on sea lions?

Response: A. Section 7.7 of the DEIS discusses Aydin (2010) concerning the modeling of groundfish, Steller sea lions, and fishery interactions. This section does not address management measures to further reduce Atka mackerel fishing an additional 2 percent as this further reduction is not part of the alternatives analyzed in the DEIS.

B. Figure 7-10 shows the equilibrium state of the Aleutian Islands simulated ecosystem, including Steller sea lions, after 50 years of reducing Atka mackerel mortality by 10 percent. Information on how long it would take to reach 6 percent is not currently available, and exploratory modeling indicates there would be substantial uncertainty in any provided estimate.

C. As this simulation presents an equilibrium result, this would be expected to persist as long as fishing pressures and baseline modeled environmental variables do not change.

D. Aydin (2010), and therefore Section 7.7 of the DEIS, do not simulate closing both the Pacific cod and Atka mackerel fisheries and the effect on sea lions. None of the alternatives analyzed in the DEIS would close both the Atka mackerel and Pacific cod fisheries. In terms of predicting effects on levels of potential prey, Aydin (2010) and Section 7.7 do conjecture that if fishing is reduced simultaneously on Pacific cod and Atka mackerel, it is possible that the reduced mortality on Pacific cod would result in an increased mortality on Atka mackerel that would be greater than the mortality removed from Atka mackerel by fishing closures (DEIS 7-20). However, modeling in Aydin (2010) also suggests that competition with pollock has a stronger effect on Atka mackerel than predation by Pacific cod (DEIS 7-22).

CH7-2 Comment: The EIS needs to incorporate the multi-species food web model as it is the model that incorporates predator/prey relationships. The EIS should use analytical methods that include predator/prey relationships. The EIS should incorporate the conclusions of Aydin (2010) on the multi-species modeling that indicated little to no benefit to Steller sea lions from closure and restriction of the Aleutian Islands Pacific cod fisheries.

Response: Section 7.7 discusses Aydin (2010) concerning the multi-species modeling of Atka mackerel/Pacific cod interactions in the Aleutian Islands. The analysis of the effects of the alternatives included predator/prey relationships. Section 7.5.1 describes modeling of predator and prey relationships. Section 7.8.2.3 discusses the potential impacts of the alternatives on predator/prey interactions. Section 5.2.2.2 used more recent information described in Section 3.2.4 regarding prey interaction between Atka mackerel and Pacific cod to conclude that there are no beneficial effects from prey removal, including Pacific cod, on Steller sea lion prey availability.

CH7-3 Comment: Figure 7-13 for Aleutian Islands Pacific cod also refers to a similar figure for Atka mackerel (biomass distribution by size by Aleutian Islands management areas), however this figure is apparently omitted and is missing in the DEIS.

Response: The DEIS text referring to Figure 7-13 is discussing Pacific cod only, and the issue that Pacific cod biomass by life stage is not uniform across Areas 541–543. The reference in the title to Figure 7-13 regarding Atka mackerel was an error and will be removed in the final EIS.

CH7-4 Comment: NMFS further fails to adequately explain its multispecies model. The agency must explain the conclusions it has drawn from its chosen methodology, and the reasons it considered the underlying evidence to be reliable. For example, NMFS's model includes changes in mortality of 10 percent. However, NMFS does not explain how it arrived at the percentage or why it is appropriate. Furthermore, the data that NMFS includes in the DEIS models the effects of reducing Pacific cod and Atka mackerel mortality. Each action alternative discussed in the DEIS would open additional water to fisheries when compared to the no-action alternative. Opening these waters could seemingly increase cod and mackerel mortality. The EIS must explain how these data are reliable if it is seemingly irrelevant to the question of how opening fisheries would affect groundfish populations.

Response: Figures 7-8 to 7-10 demonstrate simulated changes in food web dynamics and are included to illustrate the interrelationships between Pacific cod, Atka mackerel, Steller sea lions, and other species. This represents the best scientific information available on food web dynamics in the Aleutians. The effects of reducing mortality can provide information that allows one to compare and contrast the effects of the different levels of fishing under the alternatives.

The 10 percent mortality change was conducted as part of an overall sensitivity analysis and results should be seen as the relative effect of a small change around the baseline; e.g., the appropriate measure is how, with a 10 percent change in input mortality, the biomass of affected species changes as a fraction of that 10 percent. For example, if a 10 percent change in one location leads to a 20 percent change elsewhere, the ratio of response to change is 2/1, and is expected to be linear as long as the perturbations remain small, so any perturbation between approximately 1 and 20 percent should give the same ratio and same interpretation of results. Outside of a small perturbation, the responses would be increasingly nonlinear and less reliable (i.e., not sufficiently reliable to use) given the difficulty in fitting nonlinear functional responses (see response to Comment CH2-17). This additional explanation will be added to Section 7.7 in the final EIS to provide the reader will more background information on considerations in modeling interactions.

CH7-5 Comment: NMFS explicitly states that it cannot compare the impact that any of the alternatives will have on the ecosystem (DEIS at ES-45). The EIS must explain why this information is unavailable and how it is relevant to NMFS's analysis. NMFS cannot take a hard look at the environmental effect of its proposed action without this information. It conducted its analysis on the assumption that prey removal caused by the fisheries adversely affect Steller sea lions by competing for prey. However, NMFS does not adequately explain this assumption, which does not agree with NMFS's statement that it cannot compare the impacts of any of the alternatives on the ecosystem. This shows that the agency cannot assess the impact that fishery closures will have on the Steller sea lion prey or its ecosystem. There is therefore no rational basis for the conclusion that the proposed action will benefit the WDPS by continuing the fishery restrictions.

Response: Chapter 7 used the best scientific information available on the Aleutian Islands and compared the impact of the alternatives in Section 7.8.2. As explained in the Executive Summary, the complications of the Aleutian Islands ecosystem in combination with the lack of data do not allow conclusions on the effects of the alternatives on the entire ecosystem. Chapter 7 evaluates impacts to the

ecosystem indicators in the Aleutian Islands by alternative to provide an understanding of the potential impacts on these indicators by alternative. NMFS determined that it had sufficient information to discern the potential impacts on the environmental components addressed in Chapters 3 through 7, even though it lacked sufficient data to make accurate determinations for the entire ecosystem. The proposed action is not intended to benefit the WDPS of Steller sea lions, rather it is to insure the groundfish fisheries are not likely to jeopardize the continued existence of the WDPS of Steller sea lions or adversely modify or destroy their designated critical habitat. However, NMFS has sufficient information to ensure that it can choose an alternative that best meets the purpose and need for this action (see Section 1.3).

Chapter 8 Comments

These comments are on Chapter 8, which provides economic analysis of the impacts of the alternatives on fleets, communities, and other affected groups. Comments received on Chapter 8 covered a wide range of issues related to the analysis, including the analysis of changes in fleet behavior in response to the regulatory measures, the “revenues-at-risk” methodology, and a variety of other topics, including the analysis of employment impacts, safety, the interaction of the Steller sea lion measures and freezer longline buyback, coverage of trawl vessels delivering to motherships, mitigation measures, suggestions for improving the organization of the analysis, and the value of Steller sea lions.

Redeployment

CH8-1 Comment: The EIS should analyze the redistribution of the fishing fleets, and the flexibility of the fleets to harvest other species or change gear types from previous regulation such as Amendment 80, and various catch share programs.

Response: The EIS reviews, sector by sector, the potential for redeployment by the vessels regulated by the alternatives. Fleet sectors examined include trawl catcher/processors (Section 8.3.3), non-trawl catcher/processors (Section 8.4.3), trawl catcher vessels (Section 8.5.3), and non-trawl catcher vessels (text within Section 8.6.1). Available models do not permit quantitative estimates of redeployment. The analysis is primarily qualitative, discussing the potential opportunities open to the fleets.

CH8-2 Comment: On page 8-85 the analysis states that the development and increase in harvest of arrowtooth flounder, Kamchatka flounder, and Greenland turbot coincided with the implementation of Amendment 80, and was therefore caused by Amendment 80. If Amendment 80, in fact, caused this change, the causality should be explained. Much of this shift resulted simply from opportunistic fishing choices.

Response: Before Amendment 80, halibut prohibited specie catch (PSC) allowances were provided separately for individual species or groups of species. The PSC allowance for turbot, Kamchatka flounder, and arrowtooth flounder was set equal to zero. This precluded directed fishing for these species by trawl vessels. Amendment 80 converted the individual species PSC limits to global cooperative limits that can be allocated by the cooperative among different target species as it chooses. This made it possible to target turbot, Kamchatka flounder, and arrowtooth flounder, and trawl harvests of these species began in 2008. NMFS will edit the text at page 8-85 to make this point in the final EIS.

CH8-3 Comment: At page 5-119, the text says that “the Aleut Corporation ... have reallocated their Aleutian Islands pollock TAC to the Bering Sea.” The text should clarify that this reallocation to the Bering Sea is away from the Aleut Corporation to other entities and that the Aleut Corporation does not benefit from the TAC in the Bering Sea. Thus the Aleut Corporation loses the potential benefit associated with the harvest of that quota.

Response: NMFS agrees that, when the Aleut Corporation is unable to harvest its pollock allocation in the Aleutian Islands, and this allocation is reallocated to the Bering Sea, the benefits from the harvest in the Bering Sea do not accrue to the Corporation, but rather to American Fisheries Act (AFA) firms, and to communities benefitting from Western Alaska Community Development Quota (CDQ) allocations. The text at DEIS Section 8.7.5 will be changed in the final EIS to reflect this comment.

CH8-4 Comment: On page 8-84, the analysis incorrectly suggests that the Amendment 80 vessels and motherships fish in the limited access yellowfin sole fishery.

Response: The analysis did not mean to suggest that these vessels fished for limited access yellowfin sole, but that motherships, including some Amendment 80 vessels, receive fish from trawl vessels participating in the limited access yellowfin sole fishery. The text on page 8-84 is confusing and NMFS will revise and clarify this text in the final EIS.

CH8-5 Comment: The analysis at pages 8-85 and 8-86 suggests that the Amendment 80 fleet expanded catches of Gulf flatfish to “offset costs,” which resulted in excessive use of halibut PSC. The relevance of this is unclear, given that the analysis does not seem to have verified that the vessels with increased activity are, in fact, vessels that have historically participated in the Aleutian Islands Atka mackerel and Pacific cod fisheries affected by the Steller sea lion measures. In fact, many Amendment 80 vessels that were impacted by the mackerel and cod closures do not even qualify to fish flatfish in the GOA. In addition, the movement would seem to have been in response to lost revenues, rather than costs.

Response: The text is relevant because it points to a potential opportunity for redeployment of some Amendment 80 vessels and the potential implications for indirect impacts on fleets not directly regulated by this action. Regulations at Table 39 to Part 679 allow some Amendment 80 vessels to move into the GOA to directed fish for flatfish, although internal cooperative management measures may impose limits on this. NMFS agrees that the sentence “This happened in 2012, with arrowtooth flounder and deep-water flatfish” on page 8-86 draws a stronger conclusion than the evidence presented supports, and NMFS will delete this sentence from the final EIS. NMFS will also rewrite the final sentence in the paragraph to take out the unnecessary language about why the cited redeployment might occur. The language “offset costs” will thus be removed from the final EIS. NMFS will add text to refer explicitly to Table 39 to Part 679 and its limits on vessel movements in the final EIS.

CH8-6 Comment: Throughout, the analysis fails to even consider the number of vessels that have License Limitation Program (LLP) endorsements that would allow for participation in fisheries outside of those regulated by the Steller sea lion measures. Some vessels may have no opportunity to fish in Gulf fisheries because of a lack of endorsements for participation in those areas or eligibility to fish for flatfish. These numbers are easily accessible and should be included in the analysis.

Response: LLP endorsement holdings by freezer-longline vessels and pot catcher/processors are discussed at pages 8-28 and 8-30, holdings by hook-and-line, pot, and jig catcher vessels are discussed at pages 8-38 and 8-39, and holdings by trawl catcher vessels at page 8-34. However, a review of the LLP text in the DEIS in response to the comment revealed that the analysis did not include evaluations of LLP holdings for trawl catcher/processors, and that the trawl catcher vessel discussion was not as detailed as those for non-trawl gear sectors. In the final EIS, NMFS will add LLP discussions for trawl catcher/processors (in Section 8.2.1) and trawl catcher vessels (in Section 8.2.3) equivalent in detail to those for non-trawl gear.

CH8-7 Comment: The analysis may understate the longer term effects of influxes of effort on markets and future opportunities. For example, the 2013 increase in yellowfin sole harvests have decreased the market for catches. Although these catches may appear to buoy revenues of vessels displaced by Steller sea lion measures, they can have a negative, more lasting effect on future harvest and market opportunities that can be easily overlooked, as it is unlikely to be revealed in annual harvest and production data. While the analysis acknowledges that these effects may exist, its presentation places little emphasis on these effects that can be substantial and have great consequences, particularly for a fleet that is already distressed by TAC reductions and area displacement.

Response: The data and model limitations make it impossible to make quantitative estimates of the impacts of the action on fleets that are not directly regulated by the action. Where potential impacts on fleets that were not directly regulated could be identified, these were discussed in the redeployment

sections. NMFS agrees that shifts by vessels into new species may have adverse price impacts that may affect fleets that are not directly regulated by the alternatives. The possibility of an adverse yellowfin sole price impact that might affect Amendment 80 vessels already active in the yellowfin sole fishery was mentioned on page 8-84.

In response to this comment, NMFS reviewed estimates of real, inflation adjusted, first wholesale yellow fin sole prices from 2004 through 2012 (nominal prices were obtained from the Alaska Fisheries Science Center). Real whole fish and head-and-gut prices fell in 2008 and 2009, showed mixed behavior in 2010, depending on product, and then rose in 2011, the year the interim final rule became effective. While this pattern does not show an adverse price effect in the first year of the effective period of the interim final rule, it is not inconsistent with one, since in the absence of the action 2011 prices might have been even higher, and final estimates of 2012 and 2013 prices are not available. Preliminary 2012 price information currently provides conflicting evidence with respect to yellowfin sole price changes that year.

CH8-8 Comment: The suggestion that catcher/processor vessels that lose revenues from Steller sea lion measures may have opportunities to make up for lost revenues outside of fishing and processing is speculative and unfounded.

Response: At page 8-22, in a discussion of the interpretation of baseline fishing revenues, not of redeployment, the analysis indicates that catcher/processor vessels may earn revenues from non-fishing activity, mentioning, as an example, the possibility of using the vessel to process salmon. The 2010 EA for the interim final rule had mentioned that the F/V *Katie Ann*, an AFA catcher/processor active in the Aleutian Islands Pacific cod fishery, had been used to tender pink salmon in Prince William Sound in past years (NMFS 2010b, page 10-16). NMFS will reference this example in the final EIS at the position corresponding to page 8-22 of the DEIS and change the example from processing to tendering.

CH8-9 Comment: The analysis largely overlooks the costs of repositioning a vessel for participation in other fisheries. These costs include both out-of-pocket expenses and lost opportunities in Aleutian Island fisheries. Particularly with respect to Atka mackerel, the analysis suggests that some losses could be offset by topping-off on Atka mackerel incidental catches in Gulf fisheries. While the analysis downplays this potential somewhat, repositioning a vessel for an opportunity to take incidental catches to offset losses from closure of a directed fishery is very unlikely and requires first that the vessel have access to and markets for the basis species needed for these top-off harvests. The analysis fails to consider management measures likely to be imposed if a substantial top-off fishery were to develop in the GOA.

Response: The analysis discusses the potential costs to directly regulated fishing operations of shifting to other fishing areas and fisheries. For example, the summary of the discussion of the impact of Alternative 1 on trawl catcher/processors mentions: (a) normal variable costs associated with fishing in new areas, (b) costs associated with learning to operate in new areas, (c) costs associated with fishing in new fisheries with vessels adapted to fishing in old fisheries, (d) potentially lower prices for Pacific cod in the Bering Sea than in the Aleutian Islands, and (e) costs associated with learning to operate in new markets (pages 8-87 and 8-88). Discussions of this topic are presented for non-trawl catcher/processors (page 8-96), trawl catcher vessels (page 8-105), and non-trawl catcher vessels (page 8-108). However, these costs were not fully summarized in the summary section 8-20, and therefore NMFS will introduce text expanding the summary discussion of these issues in the final EIS. The DEIS also discusses lost opportunities for fishing in the Aleutian Islands, particularly through the discussions of “revenues-at-risk” which are included in Sections 8.3 through 8.6, and Sections 8.8 through 8.12, and which are summarized in Section 8.20.

The reference in the comment to topping off in the GOA appears to address text on page 8-79 of the DEIS. The text mentions the possibility of a shift by vessels to the GOA, but the paragraph is primarily

devoted to explaining why this opportunity is limited. The paragraph follows up on the preceding paragraph, which explains that “Opportunities to increase Atka mackerel harvests outside of the Aleutian Islands are very limited.” The preceding paragraph discusses the Bering Sea and the cited paragraph discusses the GOA. In the final EIS, NMFS will revise the cited paragraph to relate it more closely to the preceding, by adding the opening sentence, “Opportunities are also limited in the GOA.”

Should a top-off fishery for Atka mackerel exceed the Atka mackerel TAC in the GOA, the Regional Administrator would prohibit retention of Atka mackerel in the GOA per regulations in 50 CFR 679.20. This action would eliminate any financial incentive to harvest Atka mackerel in the GOA and would effectively close any “top-off” fishing that may occur for Atka mackerel. This action would only limit retention of Atka mackerel and is unlikely to impact directed fisheries in the GOA. NMFS will add text about this to Chapter 8.

CH8-10 Comment: The RIR understates the losses by overstating opportunities for vessels constrained by Steller sea lion measures to redeploy into other fisheries or other areas.

(a) Much of what the analysis suggests can be done to overcome losses by redeployment is simply vessels responding to variability in fishery stocks and TACs. These tend to be short-lived fluctuations that would be more correctly characterized as supplemental income for participants able to opportunistically respond to variability. For example, the analysis overestimates future opportunities in the Bering Sea/Area 541 Atka mackerel fishery. The TAC in the Bering Sea/Area 541 attracted substantial effort from vessels displaced by the most recent Steller sea lion measures, as well as from other vessels. The analysis largely overlooks the recent decline of the TAC that reduces the opportunity in that area in the future. The analysis thereby overstates the future opportunity to make up for lost revenues from Steller sea lion measures by increased harvests of Atka mackerel in the Bering Sea/Area 541.

(b) The analysis also ignores the fact that these opportunities would be pursued in the absence of the Steller sea lion measures allowing the analyst to dismiss losses to the fleet from the Steller sea lion measures by citing added catches as offsetting those losses. This characterization is incorrect and leaves readers with a false sense that losses are inconsequential or may be easily overcome by deploying vessels elsewhere.

(c) Competition for the lease or purchase of quota in rationalized fisheries is already very strong and limited access fisheries have overcapacity. The analysis does acknowledge this to some extent; however, it ignores that these opportunities are less accessible because of the added pressure arising from the Steller sea lion measures, as vessels displaced by Steller sea lion measures will increase fishing pressure where these opportunities arise.

(c) The analysis incorrectly assumes that the added harvests from the Bering Sea/Area 541 fishery would not have been pursued but for the Steller sea lion measures. The ability to take any advantage of the measures that facilitated Bering Sea mackerel fishing is still predicated on having Area 541 quota under Amendment 80 allocations so the Bering Sea mackerel regulations should not be viewed as a new fishing opportunity by any means.

Response: As explained at page 8-77, given the limited models of vessel behavior available, the DEIS did not make predictions or forecasts about how vessels might redeploy into other fisheries. The analysis approached this issue qualitatively, by reviewing and explaining the options open to the fishing fleets. Where possible, the likelihood of redeployment is evaluated, given the qualitative nature of the discussion. Thus, the analysis does not overstate opportunities to offset revenue losses by redeploying. With respect to the specific points raised:

(a) DEIS at page 8-78 acknowledges the potentially transient nature of recent increases in the Bering Sea/Area 541 TACs, stating, “As noted in Section 8.2, the distribution of TACs among the three areas did change in 2011, in such a way that the proportion of the TAC for Area 541/BS did increase. This new distribution, which reflected changes in the distribution of the biomass observed in biennial trawl surveys, may or may not continue into the future. If future surveys show the biomass shifting west, towards Areas 542 and 543, the distribution of TACs may change so as to reduce fishing opportunities in Area 541/BS.” The revenue-at-risk estimates were based on the baseline years 2004 through 2010 and did not reflect events during the years 2011 through 2013.

(b) NMFS lists potential opportunities for redeployment, and does not use these to dismiss losses to the fleet from the Steller sea lion action. NMFS agrees that as fishing conditions fluctuate through time, the relative attractiveness of different fishing opportunities will vary and fleet participation in different fisheries will vary. NMFS does not have a spatial/temporal fishing model that would make it possible to project how fleets might have deployed in the absence of the interim final rule, so it is not possible to project how fleets might have fished in 2011 to 2013 if the final rule had not been in place.

(c) The DEIS does acknowledge the potential constraints in fisheries where operations must purchase or lease quota to enter, or where existing fleets will face increased competition. NMFS interprets the remainder of the comment as saying that, given redeployment by the fleet into an alternative fishery, there are fewer opportunities for redeployment left in the fishery. NMFS does not disagree with this, but it does not suggest NMFS overstated redeployment opportunities.

(d) NMFS believes that this comment is prompted by the first paragraph on page 8–79, which reads, “Opportunities to increase Atka mackerel harvests outside of the Aleutian Islands are very limited. Incidental catches of Atka mackerel taken in the Bering Sea may be retained up to the MRA, but this amount is counted against the Area 541\BS TAC. This fleet has not harvested much Atka mackerel from the Bering Sea in the past. It is possible that increased Atka mackerel prices will increase incentives for topping-off behavior.” In the final EIS, NMFS will revise this paragraph to explain that the Bering Sea harvest is counted against the Area 541/Bering Sea TAC for Amendment 80 vessels, and that it is non-Amendment 80 vessels that may have an incentive for a top-off fishery counted against the Bering Sea incidental catch allowance.

CH8-11 Comment: The analysis downplays the effects of displaced vessels on those vessels that do not participate in fisheries subject to Steller sea lion measures. These vessels are indirectly affected by greater intrusion by vessels that are displaced by the Steller sea lion measures. Productive Bering Sea flatfish and cod fishing grounds were mostly fully subscribed already and shifting a sizable fleet from the Aleutian Islands reduced everyone’s efficiency and profitability.

Response: The DEIS discusses the concerns created by redeployment, including those of congestion on the grounds and adverse price impacts. The section on trawl catcher/processor redeployment mentions congestion on page 8-81, and potential adverse price impacts on yellowfin sole and rock sole on page 8-84. The section on non-trawl catcher/processor redeployment includes a discussion of potential congestion in the Bering Sea on page 8-94, potential impacts on the price of bait on page 8-94, and the impacts of potential incidental catches of sharks and skates at page 8-95. A summary discussion on page 8-96 notes that “This action appears to have limited potential to adversely affect other fishing sectors through redeployment of non-trawl vessels. These vessels focus on, and are likely to continue to focus on, Pacific cod. Adverse impacts of redeployment into the Aleutian Islands, or Bering Sea, are likely to be mitigated by the large fishing areas available in the Bering Sea, and the existence of a fisheries cooperative allocating BSAI catches among freezer-longliners.” The trawl catcher vessel redeployment section includes a paragraph on secondary impacts on fleets that are not directly regulated at page 8-105. Text at page 8-106 indicates that the small size of the non-trawl catcher vessel fleet, and its existing

involvement in fisheries outside of the Aleutian Islands, suggests that redeployment would have negligible impacts. While issues affecting indirectly impacted fleets are dealt with in the analysis, the section on trawl catcher/processors does not include a summary paragraph on the topic similar to those in the sections on non-trawl catcher/processors and trawl catcher vessels. In the final EIS, NMFS will add a comparable paragraph to the trawl catcher/processor redeployment section (Section 8.3.3) so that this topic is less likely to be overlooked.

CH8-12 Comment: The analysis did not fully portray the difficulties of redeployment for the Pacific cod longline fleet. Because longlining requires proper depth strata, bottom contour and bathymetric configuration, vessels whose fishing has been restricted in Areas 543 or 542 will not be able to be “absorbed” in Area 541 or the Bering Sea. Grounds are very limited. The Bering Sea’s limited grounds are currently occupied by longliners that have historically fished those grounds. The Bering Sea vessels will be greatly disadvantaged in increased competition for finite grounds. More recognition also needs to be given to the large cost to re-deploy to the Bering Sea, the loss of the Aleutian Islands large cod market, and the potential for stranded quota, particularly in light of the upcoming Bering Sea and Aleutian Islands Pacific cod split.

Response: The DEIS discussed the difficulties associated with longline catcher/processor redeployment within the Aleutian Islands on page 8-91 and within the Bering Sea on pages 8-92 to 8-95. The issues discussed included the bathymetry of the Aleutian Islands and its interaction with the relatively large footprint of the hook-and-line gear operated by these catcher/processors, the potential Bering Sea and Aleutian Islands Pacific cod split, the increased costs of operating in the Bering Sea, the lower value of smaller Bering Sea Pacific cod, and the potential for increased incidental catches of skates and sharks. NMFS will revise the text to provide a more detailed discussion of the implications of the potential Bering Sea and Aleutian Islands Pacific cod split for the fleet sectors.

Revenue and revenue-at-risk estimates

CH8-13 Comment: The approach to revenues-at-risk ignores distinctions between closed areas, prohibitions on retention, and TAC limits. The analysis states that a prohibition of retention of Atka mackerel in Area 543 puts the revenues from those harvests “at risk.” Had the 2010 regulations not been in place, in 2013, the Area 543 mackerel TAC could have been set at up to 17,100 metric tons (mt). But due to the interim final rule there was no point in doing that, so TAC was set at 1,500 mt and if any of that is taken incidentally it cannot be retained. These harvests are not at risk, but are simply lost. The fact that the vessels in the fishery may attempt to offset those losses by catches elsewhere cannot overcome the loss from the prohibition.

Response: The term “revenue-at-risk” has been used throughout the DEIS to refer to revenues associated with 2004 to 2010 harvests from areas that will be closed to fishing under a given alternative. These revenues are defined as “at-risk” rather than “as lost” because there is a possibility that revenue losses may be offset to some extent as vessels substitute other fishing activities for those foregone in the closed areas. The “at-risk” concept refers to an operation’s ability, or inability, to redeploy to fish other species within a given management area. The revenues-at-risk estimates for Area 543 take full account of the prohibition on retention in that area.

CH8-14 Comment: Limiting the TAC in an area to a specific percentage of the ABC such as is currently required for mackerel in Area 542, where the Atka mackerel TAC cannot be set at more than 47 percent of ABC, results in a loss because TAC is lower than it would have been in the absence of that limit. For example, in 2013 the mackerel ABC for the Central Aleutian Islands sub-area is 16,000 mt and absent the Steller sea lions regulations in place could have been set at that amount but instead was set at 7,520 mt. The analysis should be revised to differentiate circumstances in which revenues are lost through

prohibitions on retention and TAC limitations, from those circumstances that put revenues at risk of loss from area closures.

Response: Alternatives include both (a) TAC restrictions, and/or critical habitat area harvest restrictions expressed in terms of TAC, and (b) measures closing areas to directed fishing (effectively, an entire management area in the case of Area 543). The comment is correct that estimates of harvests from areas that remain open in a management area may overstate the actual harvests that would come from the management area if the TAC-based limits in (a) are not accounted for.

The DEIS analyzes the impacts of TAC-based limits and critical habitat area closures separately, and then examines how they may interact. The Atka mackerel limits associated with Alternatives 2 and 3 are examined at pages 8-132 to 8-146.

In a review of the DEIS, made in light of this comment, NMFS found that, while the DEIS did take account of the cited Alternative 1 Atka mackerel TAC-based limit in the summary gross revenue comparisons, the topic was not discussed in Section 8.3.2, which provided the description of the impacts of the critical habitat closures. NMFS will add text to that section to address this topic in the final EIS. NMFS also found an overstatement of the impact of this constraint for Alternative 1 in Summary Tables 8-154 and 8-156. Residual Atka mackerel revenues, after considering both critical habitat closures and areas limits should be \$27.4 rather than \$26.9 million. This will be corrected in the final EIS.

CH8-15 Comment: The analysis should, to the extent feasible, distinguish area closures by their potential to result in either stranded TAC or lower value harvests. These distinctions are made at times, but should be expanded to the extent possible.

Response: The term “stranded” refers to a situation where it would be economic to harvest fish in ways that are ostensibly permissible under regulations, and in which there is no environmental reason to limit harvest, but the harvest is prevented by regulatory restrictions. TAC could be stranded in a management area if (a) a sector’s harvest is likely to be less than the allowable harvest in an area, and (b) the sector’s harvest is specific to a management area, and cannot be harvested in another management area, or it cannot be subsequently “rolled over” to another gear group within the area or in another area. The possibility that Pacific cod trawl catcher vessel TAC could be “stranded” in Area 543 was discussed at pages 8-214 to 8-215.

Several alternatives include measures that would set ABC-based area harvest limits that exceed, in some years, harvests that came from areas remaining open after critical habitat closures have been accounted for. Situations where this occurs have been identified, but have not been described as cases where fish have been stranded. The introduction of the Bering Sea and Aleutian Islands Pacific cod split in 2014 in combination with possible State of Alaska decisions with respect to the management of its Aleutian Islands Pacific cod guideline harvest level (GHL) fishery, may not leave enough Pacific cod after deductions of the GHL, incidental catch, and CDQ fish from the ABC to permit directed fishing. Steller sea lion measures that create area or sector allocations may complicate this and increase the possibility that too few fish will remain after deductions to permit directed fisheries.

The analysis discusses the harvest values associated with different alternatives and options. Sections 8.3 through 8.6, and 8.8 through 8.12, each include revenue-at-risk analyses providing estimates of the volumes and value of Atka mackerel and Pacific cod that came from areas that would have been closed, and that would have remained open, if the interim final rule had been in effect during the baseline years of 2004 to 2010. This provides an index of the relative value of harvests under the different alternatives. At pages 8-14 and 8-15, the analysis also includes a qualitative discussion of the impacts on average price

that might be associated with shifts from harvesting relatively larger and more valuable Pacific cod in the Aleutian Islands to harvesting relatively smaller, less valuable, Pacific cod in the Bering Sea.

CH8-16 Comment: The 2010 EA estimated annual revenue losses between \$44 and \$61 million. This estimate is a more accurate depiction of the effects of the measures in place than those currently in the EIS. Losses may have been lower in the years immediately after the interim final rule became effective because of an eastward shift in Atka mackerel TAC to areas less restricted by the Steller sea lion regulations. However, the losses have increased since as the Atka mackerel TAC has shifted back to the west. The affected Aleutian Islands dependent companies have not been able to make up for forfeited revenues in flatfish and other Bering Sea or Gulf of Alaska fisheries beyond what they would normally have done in those fisheries had the Steller sea lion regulations not been in place. The analysis needs to make this clear.

Response: Although the 2010 EA and the 2013 DEIS differ in the way revenues were estimated and presented, the underlying numbers are of a similar magnitude. High and low estimates of revenues from areas that would have been open under rules approximating those in the baseline years 2004 to 2010 (Alternative 4), but that would have been closed under the status quo (Alternative 1) during the baseline years, may be estimated from data in tables in Section 8.20 (the summary section). Summing the potential upper bound estimates of sector revenues from the areas that would be opened under Alternative 4 but not Alternative 1 generates revenues of about \$62 million and similarly summing low bound estimates generates revenues of about \$34 million. In light of SSC cautions about interpretation of the revenue-at-risk results, NMFS has not treated the results as revenue projections, but has used the revenue results as an index of the relative restrictiveness of the different alternatives.

The revenue estimates in the 2010 EA and in the 2013 DEIS were based on revenue impacts over baseline years (2004 to 2009 for the 2010 EA, and 2004 to 2010 for the 2013 DEIS), and would not have been influenced by changes in Atka mackerel biomass location and TACs in the years 2011 to 2013. The analysis discusses the opportunities directly regulated fishing firms had to move their vessels into other fisheries in order to offset revenue losses in the regulated Aleutian Island Atka mackerel and Pacific cod fisheries.

The analysis provides some information on actual vessel redeployment in the period after the implementation of the interim final rule (Alternative 1). Trawl catcher/processor redeployment in the Pacific cod fishery is discussed at page 8-81, non-trawl catcher/processor redeployment at page 8-94, and trawl catcher vessel redeployment at page 8-103. However, in the absence of a model that would make it possible to estimate vessel activity in 2011 to 2013 in the absence of the interim final rule, it has not been possible to estimate the extent to which any redeployment in those years was driven by the interim final rule or by other factors.

CH8-17 Comment: NMFS highlights several noteworthy flaws in its analysis, these include (1) the potential that fishing operations would have redirected their efforts had the alternatives been in place during the baseline years; (2) the inconsistency of the baseline years due to regulatory changes enacted during the 7-year period, such as Amendments 80 and 85; and (3) the failure to account for future regulatory changes, like the SSC's proposal for separate Aleutian Islands and Bering Sea ABCs starting in 2014. However, NMFS does not explain why it considers its methodology to be reliable in light of these shortcomings. Rather, the DEIS (page 8-72) contains language indicating that the data used is actually not a reliable indicator of the proposed action's economic effects ("Given these considerations, it is clear that estimates of residual revenues and at-risk revenues contained in this analysis are not, and cannot be, projections of these values in the future if one or another of the alternatives were adopted" and, in the context of behavioral changes by vessel operators, "the at-risk and residual harvest and gross revenue will be poor guides to the actual impacts in the Aleutians themselves"). NMFS must explain why

it considers the evidence underlying its selected methodology is reliable if that methodology cannot project the future economic effects of the alternatives.

Response: NMFS and the Council have used “revenue-at-risk” analysis to evaluate proposals for spatial closures. This approach, or very similar approaches, have been used in the Alaska Region, including in the Supplemental Steller Sea Lion EIS in 2001 (Appendix C) (NMFS 2001b), the Final Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska of 2005 (Appendix C) (NMFS 2005), and the 2010 Steller sea lion protection measures EA (Chapter 10) (NMFS 2010b). The Council’s SSC endorsed the proposed methodological approach to Chapter 8, including the use of revenue-at-risk analysis in October 2012 (DEIS, page 8-286).

The revenues-at-risk approach provides estimates of the catch and gross revenues during a baseline period that came from areas that would have been closed if a regulatory measure had been in place. These are used as a first approximation of the change in harvest associated with closing those areas. This calculation of volumes of fish that came from within the closed areas is based on estimates made using the Alaska Region’s Catch in Area (CIA) Database. This, in turn is based on the Alaska Region’s Catch Accounting System data, modified by algorithms developed to allocate catch to areas with a fine spatial scale. The Council’s SSC has reviewed the methods underlying the CIA. Catches from closed areas were monetized using annual species price information derived from the Alaska Fisheries Information Network and converted into real, inflation-adjusted dollars. NMFS described the revenue-at-risk methodology in detail at DEIS pages 8-69 to 8-73, and has been careful throughout to draw attention to limitations of this methodology. Where possible, NMFS has supplemented the revenue-at-risk analysis with additional information and analysis, particularly with respect to the potential redeployment of fishing fleets as they seek to offset adverse impacts of the proposed alternatives by becoming more active in other fisheries. NMFS explains at page 8-70 that it chose the revenue-at-risk methodology in the absence of good alternative approaches to the analysis. Because of the limitations of the method, several of which are discussed in the comment, NMFS has interpreted the results as an index of the relative restrictiveness of the different alternatives, rather than as a projection of future revenue impacts. This is consistent with recommendations made by the Council’s SSC in April 2013 (page 8-286). NMFS will elaborate the discussion at page 8-70 to add the points brought up in this comment response.

CH8-18 Comment: The DEIS would be improved if it were to use area specific prices to account for the fish size differences. Otherwise, the revenue-at-risk methodology will understate the true revenue-at-risk if fishing operations are forced to shift from areas where fish bring higher prices to areas where prices are lower. However, NMFS indicates that it does not keep price data at the area level. Thus, there may be no reliable way to fix the problem.

Response: The comment is correct. At the wholesale level (the level at which comparisons were chiefly made), State of Alaska Commercial Operator Reports (COAR) are the only source of first wholesale revenues, and while they are widely used within the NMFS Alaska Region for this purpose, they do not have fine spatial or temporal detail. Prices are annual, BSAI-wide prices. The analysis mentions this limitation of this data source and describes an unsuccessful effort made by an Alaska Fisheries Science Center economist to identify spatial price structure using econometric techniques (page 8-15; pricing methods are also discussed at page 8-23). The analysis does include ex-vessel revenue estimates for catcher vessel fleets. These are based on fish ticket and COAR data. These prices are broken out separately for the Aleutian Islands and the Bering Sea, and should pick up any differences in Pacific cod prices for this fleet. However, wholesale prices were used to compare this fleet to the other sectors, in order to conduct the comparisons at the same market level. As the comment states, there is no reliable way to fix this problem. The implications for Pacific cod revenue impacts are discussed at page 8-87 for trawl catcher/processors, page 8-96 for non-trawl catcher/processors, page 8-106 for trawl catcher vessels, and page 8-108 for non-trawl catcher vessels.

CH8-19 Comment: If the directly affected fishing operations redeploy their efforts to other areas and species, this action may offset some of the adverse impact on their revenues, but it would also cause an adverse impact on other fishing operations through, for example, congestion effects or price effects. For example, vessels that formerly fished for Pacific cod are fishing more for yellowfin sole, which is driving down the price for that species. Thus, the adverse economic impacts of the fishery management restrictions will likely be distributed more widely, both in terms of affected fishing operations and affected geographic areas and communities, than the revenue-at-risk methodology would suggest.

Response: NMFS agrees that the revenue-at-risk analysis is not complete in itself. NMFS supplemented the revenue-at-risk analysis with a discussion of the redeployment of directly regulated fleets, and in the course of this discussion addressed potential impacts on other fleets when these were identified. The specific instance of a potential adverse impact on yellowfin sole prices was mentioned at page 8-84. Communities may also be impacted by this action. Community impacts are addressed in Section 8.15, and in Chapter 10.

CH8-20 Comment: Revenue-at-risk is not the only methodology that could be used to analyze the economic impact of the fishery management restrictions. Another methodology used by economists would take advantage of the “natural experiment” provided by the change in fishery management restrictions between 2010 and 2011. Comparing fish catch, revenue, and prices before and after the fishing restrictions went into place could provide a way to measure the economic impacts of the fishing restrictions. In practice, the viability of this “before-after” methodology might be limited by the relatively short time period with the fishery management restrictions in place (2011 and 2012) along with the fact that there are other factors that affect fish catch, revenue, and prices in any given season (including changes in TAC and other regulations). These data cover only Atka mackerel and Pacific cod and only the areas directly affected by the restrictions put into place in 2010, and thus only allow an analysis of the direct effects of the restrictions on those species and areas. However, the data could be extended to other areas and species in order to capture the indirect effects of the restrictions caused, for example, by directly affected fishing operations switching to other areas and species. It would be important in any such exercise to isolate only the increased fishing in other areas and for other species that would not have been pursued absent the fishery management restrictions.

Response: The proposed “before-after” methodology is a variation of the widely used “difference-in-differences” methodology. The difference-in-differences approach exploits natural experiments with two similarly situated groups, a control and a treatment group, where the treatment group was subjected to some external impact that was not felt by the control group. The treatment and control groups are then compared with respect to how outcomes of interest changed for each. The “differences” are the changes in the outcome of interest for each group, and the “difference” is the difference between these changes. Under the right circumstances both groups are subject to the same set of “background” changes, and the difference in their differences may be interpreted as a result of the impact. In the Aleutian Islands, for example, if half of the hook-and-line catcher/processors had been subjected to the closures and half had not, one might compare average gross revenues for the two groups in the year before and the year after the effective date of the interim final rule to look for the impact of the rule.

However, NMFS determined that this approach did not lend itself to analysis of the interim final rule for several reasons: (a) the analysis addressed five alternatives, not simply the interim final rule and a return to 2010 (essentially Alternative 4); (b) control groups were not available: all Aleutian Island vessels of a certain class were subject to the same impact and vessels fishing outside of the Aleutians were not considered a suitable control group due to the possibility of selection bias (that is, there were reasons some vessels were active in the Aleutian Islands and some were not); and (c) a comparison of events in two years would focus on too few years of experience. The proposed “before-after” methodology lacks the control group element in the difference-in-differences approach. However, although the analysis was

primarily based on the revenues-at-risk approach, supplemented with a qualitative analysis of redeployment, before and after analyses were occasionally used to supplement the analysis. This was done in the discussion of changes in employment on pages 8-66 to 8-68, and in discussions of redeployment at pages 8-81, 8-94, and 8-103. NMFS will add a paragraph based on the preceding discussion to the discussion of revenue-at-risk in the final EIS.

Remaining issues

CH8-21 Comment: NMFS uses two methods to estimate impacts on direct employment in directly regulated fisheries. Both are subject to problems that should be addressed. One method is based on weeks fishing before and after the regulation became effective. This may understate employment impacts because it would not capture reduced fishing if a vessel continued to fish during a week, but fished for fewer days that week. A second approach does not appear to suffer from this flaw, but may be subject to other biases, if Amendment 80 vessels are not representative of other vessels fishing the affected areas. Further, NMFS focuses on time employed, but does not make estimates of compensation. It is possible that time employed may be unchanged, while compensation is reduced. A better approach to crew impacts is to perform a survey or obtain other data that would directly measure the time worked and compensation received by crew members and support personnel and allow a comparison of before and after the fishing restrictions went into place. Such data could be obtained from the financial records of fishing operations.

Response: In the 2010 EA NMFS used a new impact model recently developed at the Alaska Fisheries Science Center to provide estimates of potential direct and indirect employment impacts. These estimates depended on assumptions about potential changes in vessel activity and production and only related, ultimately, to number of jobs, without regard to whether the jobs were annual or seasonal, and whether they were part-time or full time. Before deciding whether to apply this model and its assumptions for use in the DEIS, NMFS examined changes in vessel activity, and estimates of annual-equivalent employment, before and after the effective date of the interim final rule. The limitations of this are carefully described at DEIS pages 8-66 to 8-68. NMFS's only conclusion from the analysis was the limited one that it did not provide support for the hypothesis that the interim final rule created large reductions in direct employment in the sectors directly regulated by the 2010 interim final rule. Because of this conclusion, NMFS did not use the employment impact model it had used in 2010 (Footnote 67 on page 8-66). Discussions of employment impacts in the analysis are thus qualitative. The commenter is correct that NMFS has not made quantitative estimates of changes in employee compensation. The information necessary to produce quantitative estimates is not publically available in sufficient detail.

CH8-22 Comment: NMFS did not attempt to measure indirect employment effects. Although NMFS argues that the "multiplier" effects that generate indirect effects from direct effects are generally smaller in Alaska than elsewhere, they are not zero; therefore, some indirect effects should be expected to follow from the direct effects.

Response: As discussed in the response to Comment CH8-21, in 2010 NMFS made estimates of indirect employment impacts associated with the interim final rule. For reasons discussed in response to Comment CH8-21, NMFS did not use the employment impact model it had used in 2010 in the DEIS, and thus has not made quantitative estimates of indirect employment impacts. NMFS provides a qualitative discussion of indirect impacts in Section 8.15, and in Chapter 10 (on community impacts). The language in Section 8.15 refers to community impacts without explicitly specifying that these are employment and income impacts, and the language will be clarified to make this explicit. Section 10.4.3 on the fishery dependency and vulnerability to adverse community-level impacts of the proposed alternatives especially goes into detail about the interconnections between the fisheries and indirectly impacted economic sectors.

CH8-23 Comment: At pages 8-66 and 8-67, NMFS attempts to show that the interim final rule does not have large employment impacts in the fishing sectors it directly regulates based on the number of weeks per year that groundfish fishing vessels are active. However its calculation is inadequate to show actual employment impacts because it (1) accounts for a week of fishing even if a vessel was only fishing for a single day; (2) does not account for the income of the persons employed on these vessels, (3) only looks at one component of firm employment, (4) does not account for indirect or induced employment, and (5) does not compare employment to an explicit counter-factual in which the interim final rule had not become effective. Although NMFS acknowledges the limited application of its calculations, it still relies on those calculations to attempt to show that the interim final rule has no negative impacts on employment. NMFS must explain why it believes this data to be reliable in light of its shortcomings, and NMFS needs to address alternative approaches for addressing employment impacts, including indirect employment effects.

Response: NMFS does not assert that this data would be reliable for making estimates of employment impacts, and NMFS does not use it for this purpose. Moreover, NMFS did not assert that there would be no negative impacts on employment on the basis of this data. As the DEIS states at the bottom of page 8-66, “These results do not preclude adverse employment impacts from the interim final rule...” In response to this comment NMFS will review the discussion at pages 66-67 to determine if the language can be modified to clarify the limited nature of the conclusion. NMFS provides a qualitative discussion of employment changes.

CH8-24 Comment: Allowing retention in Area 543 and increasing the TAC available in Area 542 may have a positive effect on safety since increased numbers of vessels fishing close to one another in Area 543 may promote safety. Moreover, mothership operations, with their fleet operations, may be safer than isolated catcher/processors.

Response: Safety is discussed in Section 8.17.1. The analysis notes three things applicable to this comment: (1) increasing fishing westward moves fishing operations further from search and rescue resources; (2) decreasing fishing density increases risk (so conversely, increasing the number of vessels nearby should decrease risk); and (3) increasing the number of fishing vessels less than 60 feet long increases risk. NMFS will add the following sentences to this discussion: “Should additional fishing pressure take place in Areas 542 and 543, these vessels will be further away from traditional USCG search and rescue assets. Due to this distance, any prospective search and rescue response from these assets will take longer, potentially putting mariners at additional risk. If as a result of fleet redeployment to these areas vessels are operating in closer proximity to each other, safety could potentially be improved due to good Samaritan assistance, although this could not be guaranteed.”

CH8-25 Comment: The action undermines the objectives of the Federal buyback of freezer longliners in the BSAI. In 2007, the freezer longline fleet borrowed \$35 million in Federal buyback loans to reduce an overcapacity in the fleet. These funds were used to buy out three vessels with LLP permits and Pacific cod endorsements, and one latent LLP permit. In 2012, the members entered into a second buyback agreement with NMFS to further efforts to reduce over-capacity. Closing areas to the Aleutian Islands longline fleet and forcing all or some of these vessels into the Bering Sea exacerbates a situation that the Federal Government has just recently invested in alleviating.

Response: NMFS does not agree with the view expressed, and sees these two issues as not directly related. Reducing the number of separate licenses available to fish in a fishery is not the same thing as eliminating overcapacity if individual license holders are free to use inputs more intensively. Since the interim final rule became effective in 2011, the fleet has announced the construction of three new freezer longliners to replace existing capacity in the fleet. In October 2012, the Council took action to increase the maximum length overall in the freezer longline sector to 220 feet. Both these measures may increase

input use per license. Moreover, in 2010 the firms in this sector formed a private fisheries cooperative that makes it possible for them to rationalize fishing activity in the BSAI and to change fishing capacity as necessary to respond to changing circumstances. Finally, restriction of the area within which the fleet may operate in order to protect the population of Steller sea lions is not, with respect to the fleet overcapacity, different in principle from other conservation oriented restrictions, such as restricting the volume of Pacific cod the fleet may harvest in order to protect the Pacific cod stock when it is low.

CH8-26 Comment: The analysis of Alternatives 2 and 3 at pages 8-130 to 8-150 is very confusing. The section begins with a comparison of various provisions that would set (or limit) TACs based on ABCs. These TACs are then compared to “Alternative 2 catches,” which seem to be projected catches. The section later goes on to compare these Alternative 2 catches to projections under other alternatives. This ordering creates a few issues for readers. First, the reader must guess the meaning and means of generating “Alternative 2 catches.” Second, the reader must revisit the comparison of the TAC option to the “Alternative 2 catches” to understand how those options compare to other alternatives. Switching the ordering of these discussions would provide a more transparent analysis.

Response: NMFS appreciates the feedback and will review the section. NMFS will consider changes to the order of the discussions as suggested, and other measures to clarify this section.

CH8-27 Comment: The statement that “The results are not a forecast, but a thought experiment” on page 8-150 does not seem appropriate for an analysis.

Response: NMFS agrees and will remove the sentence from the text of the final EIS.

CH8-28 Comment: The DEIS insufficiently evaluates the socio-economic impacts of the proposed action and fails to adequately explain how those impacts may be mitigated.

Response: Section 8.15 and Chapter 10 provide detailed background information and analysis for a range of impacted communities, included those of Adak, Atka, Unalaska, other Alaskan communities, Pacific Northwest communities, CDQ communities, and Aleut Corporation shareholders. These represent communities of interest as well as geographically defined communities. Alternative 1, the status quo, provides an analysis of the effects of the interim final rule that became effective in January 2011; Alternatives 2 through 5, were developed based on recommendations from the Council and the Council’s Steller Sea Lion Mitigation Committee. The measures in Alternatives 2 through 5 that allow for more fishing than Alternative 1 mitigate the impacts of Alternative 1.

CH8-29 Comment: The analysis lists effects without a coherent synthesis that would allow a reader to understand the overall economic impact of the action on fleets affected by the Steller sea lion measures. For example, even the summary discussion of redeployment of displaced vessels seems to just list other fishing opportunities (with some qualification of the potential of each opportunity) with little discussion of the overall potential of vessels to successfully pursue those opportunities or the impacts on other fleets that would be subject to this influx of effort. This can be juxtaposed against the assertion (on page 8-87 of the analysis) that operating costs would be lower if the fleet affected by the Steller sea lion measures chooses not to fish. This statement clearly demonstrates the equivocation of the analysis, which seems to bounce from one extreme (lost revenues being made up through added fishing) to the other (reduced costs from not fishing). These assertions should be balanced against their potential to occur, so that the reader has a better sense of probable (not just possible) effects. In many cases, the losses are impossible to recover because of prohibitions on retention, or reduced TACs, or are unlikely to be recovered because of area closures that prevent or reduce the value of harvests.

Response: The difficulty in understanding the overall economic impacts of each alternative is due in part to the complexity of the alternatives and options that must be analyzed. It is also a result of the information gaps and absence of modeling frameworks that would allow systematic comparisons of impacts using a common metric. Section 8.20 provides a high level summary of the impacts of the different alternatives on fleet sectors and communities, depending in significant part on the relative rankings created by the estimates of residual revenues associated with the different alternatives. This text is repeated in the executive summary.

CH8-30 Comment: The analysis confuses the nature of impacts by periodically, and incorrectly, referring to losses as a cost. For example, the beginning of Section 8.3.3 on page 8-77 refers to the increase in costs from restricted fishing grounds as the primary effect on the fleet of the Atka mackerel and Pacific cod fishery limitations of the status quo. Losses and costs may occur simultaneously, but are separate items that have a compounding effect that must be considered. A thorough review of the DEIS needs to be undertaken to correctly distinguish losses from added costs.

Response: NMFS has separately identified potential revenue losses where fishing is restricted by regulation, and the potential for increased costs of fishing in areas to which the fleet may redeploy. The text at page 8-77 does not describe an increase in costs from restricted fishing grounds as the primary effect of the restrictions. The text says, “The status quo alternative tends to increase the costs of fishing for Atka mackerel and Pacific cod in the Aleutian Islands, by restricting vessel access to preferred fishing grounds.” It thus becomes more costly to take any given level of harvest in the Aleutian Islands because some grounds, which had been utilized in the past, are no longer available. The text at this point is introducing a discussion of redeployment possibilities by explaining that as firms in an area are restricted or face higher costs for fishing in the Aleutian Islands, they will respond by changing their operations as they seek to maximize their profits under the new constraints. NMFS will revise the text at this point as necessary to clarify its language.

CH8-31 Comment: The analysis integrates trawl catcher vessels that deliver to motherships with trawl catcher/processors to avoid confidentiality issues. As a result, the analysis often fails to distinguish the different opportunities of these two different vessel types and that losses to a catcher vessel differ from those of a catcher/processor operating as a catcher/processor and then again differ from those losses as a catcher/processor acting as a mothership.

Response: NMFS acknowledges that restrictions on the distribution of data, required to protect the confidentiality of individual vessel gross revenue estimates, make it impossible to provide as much detail on trawl catcher vessels delivering to mothership fishing operations as is provided for other sectors. Those delivering Atka mackerel to catcher/processors acting as motherships are grouped in the trawl catcher/processor sector while those delivering Pacific cod to motherships are grouped with those delivering Pacific cod to shoreside processors. The number of operations in each group is small enough that only limited information can be released.

However, NMFS has been able to provide some background and analysis. The numbers of trawl vessels making Atka mackerel deliveries to catcher/processors, and the number of catcher/processors accepting those deliveries are summarized in Table 8-2, while similar counts for vessels delivering and receiving Pacific cod are summarized in Table 8-3. There is a discussion of numbers of vessels, and a limited discussion of revenues involved, on page 8-22. A discussion of mothership operations on page 8-86 includes a discussion of the relationship between Amendment 80 and the evolution of mothership activity, and of trends in numbers of catcher vessels making mothership deliveries. On page 8-97 the analysis notes that mothership activity is the predominate operational mode for trawl catcher vessels operating in Area 543. Figures 3-11 to 3-14 in Chapter 3 show the locations of Pacific cod trawl catcher vessel harvests for vessels making deliveries to shoreside plants and to motherships; this provides insights into

the differences and similarities of the operations of the two classes of vessels. These figures are discussed at page 8-101 of Chapter 8. At pages 8-214 and 8-215, there is a discussion of the potential for certain options to Alternative 2 to strand Pacific cod quota in Area 543 because of the use of motherships by the Pacific cod trawl catcher vessels there.

CH8-32 Comment: Each Steller sea lion is worth \$2 million to me and most Americans.

Response: NMFS notes this personal comment. In Section 8.2.10, the DEIS summarizes the available scientific information on the value U.S. citizens place on the health of the Steller sea lion population.

Chapter 10 Comments

These comments are on Chapter 10, which provides a socioeconomic analysis of the alternatives and effects on communities. Comments on Chapter 10 dealt with impacts on affected communities, especially with impacts on Adak, and the coverage of impacts on State of Alaska fish taxes, Western Alaska Community Development Quota (CDQ) royalties, and mitigation measures.

CH10-1 Comment: NMFS does not adequately estimate the economic impacts of the proposed action or any other alternative on the state's tax revenue. NMFS uses aggregate tax data to demonstrate the ratio of fishing industry-related taxes to all other taxes. One problem with the shared state tax data is that they are aggregated across species and do not detail the specific revenues received from Atka mackerel, Pacific cod, and pollock. This makes it difficult to identify effects due to the fishing restrictions, which affect only certain species. The aggregated tax data is inadequate regarding how the proposed action will actually affect tax revenue. The DEIS acknowledges that this is not an accurate way to represent data and that the information set does not provide insight into the changes in tax revenue that would stem from each alternative (footnote 61 on page 8-61). Yet, NMFS relies on the data to attempt to show the impact that the alternatives will have on taxes. The DEIS should address whether it is possible to use disaggregated tax data for the species at issue, if such data are available.

Response: In response to this comment, NMFS has contacted the Alaska Department of Revenue and the Alaska Division of Community and Regional Affairs about the availability of shared fishery revenues broken out by species. NMFS will also investigate the potential for making its own independent estimates of species specific tax revenues. NMFS will revise Section 8.2.11 as necessary to describe the results of this investigation. NMFS will also add text to the analysis to discuss the impacts on tax revenues retained by the State of Alaska, independently of those shared with communities. The information on fishery taxes in Sections 8.2.11 and 10.3 was provided to show the importance of fisheries related revenues (from their own fisheries taxes and from state shared tax revenues) to the municipalities in the action area in relation to both other sources of revenue and to municipal expenditures. In Chapter 10 this helped illustrate community dependence on fisheries and potential vulnerability to regulations restricting harvests. Chapter 10 will be modified to elaborate on the impacts of fishing restrictions on municipal revenues. The DEIS does not say that this is an inaccurate way to represent the data on page 8-61; it does discuss the limitations of the available data and the use to which the data can be put. NMFS will edit this footnote to emphasize that the data they do not provide "quantitative" insight. Subsequent analysis in Section 8.15 and Chapter 10 provides qualitative discussion of the impact of fisheries restrictions on tax revenues. NMFS will also add text to the analysis to discuss the impacts on tax revenues retained by the State of Alaska, independently of those shared with communities.

CH10-2 Comment: Since the interim final rule was implemented, marine fuel sales in Adak have dropped nearly in half, representing a significant decline in overall volumes sold. This volume loss will result in a net income loss in the absence of substantial price increases. While the Aleut Enterprise LLP had an overall profit in fiscal year 2012, fuel sales operations in Adak were not profitable. Since fishing vessels can go elsewhere to buy fuel, the Aleut Enterprise LLP will have to substantially raise fuel prices to the community to maintain fuel sales profitability. Higher fuel prices would not be sustainable for any length of the time and community would die.

Response: Impacts of the action on catcher/processor port visits to Adak are an important determinant of the impact on fuel sales, and a new methodology to estimate port visits was developed specifically for the DEIS to shed additional light on this issue. Section 8.15 discusses the impact of the alternatives on port visits and associated sales of goods and services in general terms. Section 10.4.3.1.3 discusses the importance of fuel sales to Adak, the change in sales since the interim final rule was implemented in 2011, and the impact of these changes on Adak (see especially page 10-70).

CH10-3 Comment: The nation and state have stakes in the continued existence of Adak because it provides a deep-water port in a busy and remote transportation corridor (it is the western-most publicly accessible deep-water port in the Nation). This affects state and national economic and security interests. These have a value that would be lost if Adak disappears and that needs to be taken into account.

Response: In response to this comment, NMFS will modify Section 8.15, which discusses the community impacts, adding a discussion of this issue.

CH10-4 Comment: The DEIS correctly identifies Adak as the community with the greatest impact potential. The impacts have been real and were a major contributor to the loss of the seafood processor in Adak.

Response: NMFS acknowledges this comment.

CH10-5 Comment: Though I believe the economic analysis is excellent, there is one potentially major flaw. The analysis may not sufficiently take into account Adak's current situation. It must be understood the community is already teetering on the edge of existence. The inability to fish pollock, the loss of the SBX Radar project home ported in Adak, and now the additional regulations have been important setbacks. The community is dying. Any further reduction in economic opportunity would only hasten the decline.

Response: The DEIS discusses Adak's fishery dependency and its vulnerability to adverse community-level impacts of restrictions on regional fishery activity (see Section 10.4.3.1 in general; see Section 10.4.3.1.3 for a specific discussion of the key importance of the fisheries to the local economy as result of other potentially locally important sectors seeing little activity or not providing previously anticipated returns, including the SBX radar project). The inability of the Aleut Corporation to realize the potential benefits of its Aleutian Islands pollock allocations is discussed in Section 3.4 (and especially Section 3.4.3), and Section 8.7, while the specific limited engagement of Adak in that fishery is discussed in Section 10.2.7. The DEIS acknowledges that the direct and indirect impacts of restrictions on fishing and activity and economic output could reverberate throughout the community and threaten the progress made to date by Adak with regard to building a stable residential population (see Section 10.4.1.3).

CH10-6 Comment: The EIS must also account for the impact of its proposed action on Adak, which has a large minority population. This is an environmental justice issue. As discussed in the DEIS, Icicle Seafoods closed its operations in Adak, largely as a result of the interim final rule restrictions (page 8-238). The DEIS acknowledges that this closure "will likely result in a broad and deep economic and social impacts for the community of Adak that are not reflected in the current community impacts analysis" (page ES-59). NEPA requires that the EIS must adequately discuss these adverse impacts that its proposed action will have on Adak.

Response: The commentator is correct that the DEIS refers to wide and deep economic and social impacts for the community of Adak "that are not reflected in the current community impacts analysis in Chapter 10" (footnote 2 on page ES-59). This statement in the footnote is incorrect. Sections 8.15 and Chapter 10 document the dependence of Adak on nearby fisheries, its vulnerability to regulatory restrictions, and rank alternatives with respect to their potential impacts on Adak. NMFS will modify the footnote to remove this statement. NMFS also intends to revise this footnote so that it describes the purchase of the plant's processing equipment by the City of Adak in 2013. The DEIS does not assert that Icicle Seafoods closed its operations in Adak largely as a result of the interim final rule restrictions. The comment is based on a footnote on page 8-238 which notes that Icicle announced its intent to withdraw from the plant in April 2013, and that Icicle representatives reportedly cited several reasons for its decision, including (1) regulatory uncertainty, (2) concern over the Pacific cod stock in the region, and

(3) high operating costs at Adak. While the restrictions on the Pacific cod fishery undoubtedly played a role in reducing the profitability of the plant at Adak, NMFS notes that the firm operating the processing plant entered bankruptcy in 2009, a year before the interim final rule was published, that Icicle began operating in Adak in 2011, after the interim final rule had become effective, and that it withdrew from the plant at a time when the regulatory proposals pertaining to the interim final rule that were under consideration would have relaxed its provisions. Other factors may have played an important part in the firm's decision, including the Pacific cod stock and operating cost concerns cited by Icicle representatives, the prospective Aleutian Islands-Bering Sea Pacific cod total allowable catch split in 2014, and plans to expand shorebased Pacific cod buying at nearby Atka.

CH10-7 Comment: NMFS fails to evaluate what the continued loss of royalties stemming from fishery closures will mean for CDQ communities and their Alaska Native populations, as it is unable to differentiate between the impacts that each of the proposed alternatives will have. This is an environmental justice concern. The DEIS acknowledges that the CDQ communities will likely be adversely affected by the proposed action (DEIS at 10-87 to 10-88). However, NMFS fails to discuss what effect the loss of royalties resulting from the continued restrictions will have on these communities. It states that "it is not possible with existing information to differentiate between the impacts of the different proposed action alternatives on the CDQ groups," and that it is "likely that such impacts would be most directly tied to AI Atka mackerel CDQ holdings specifically and that these impacts would be at least somewhat mitigated by the fact that dependency of any particular CDQ group on AI Atka mackerel CDQ holdings is likely to be relatively low." These general statements about possible effects do not meet NEPA's "hard look" standard. If the agency has incomplete information on which to make this determination, it must also explain the relevance of this missing information, and why it is not included.

Response: The impact of the alternatives on communities, including CDQ communities, is discussed in Section 8.15, and particularly on pages 8-247 to 8-248 (which reference a discussion at pages 8-245 to 8-246). The methodology used to rank the alternatives with respect to CDQ impacts is based on estimates of changes in estimated revenues to sectors and species during the baseline years 2004 to 2010. The commenter is correct that the text at page 10-88 says it is not possible to differentiate between the impacts of the proposed action alternatives on the CDQ groups. NMFS will correct this text in the final EIS to add the modifying clause, "beyond the qualitative rankings provided in Section 8.15." The text in Chapter 10 will be revised to tie it more closely to that in Section 8.15, and to explain the relevance of missing information, and why it is not included.

CH10-8 Comment: The DEIS does not adequately address mitigation measures for the socio-economic impacts of the proposed action as required by NEPA. NMFS includes two discussions of mitigation of adverse impacts on low or minority populations but neither of these meets the NEPA standard. First, NMFS concludes that "impacts to CDQ communities related to the fluctuations in CDQ royalty income for any given species are potentially mitigated by relative diversity of their portfolio of CDQ holdings (and therefore potential CDQ royalties) across all CDQ species and relative dependence of individual CDQ groups on royalty income as opposed to direct income based on other investments" (DEIS at 10-87). NMFS shows that royalties have accounted for a minority of CDQ income, but it does not evaluate what the loss of this minority of income will mean to the community. Furthermore, stating that a community can rely on less of its income is not a mitigation measure, but merely a statement of fact describing what will necessarily occur if royalties are reduced. Second, NMFS states that "for groups holding Pacific cod CDQ, potential impacts related to the proposed Steller sea lion protection measures are also mitigated to some degree by the fact that CDQ Pacific cod allocations are not specific to the AI subarea and may be harvested elsewhere in the Bering sea" (DEIS at 10-88). The agency provides insufficient evidence of the ability to harvest cod elsewhere.

Response: In neither of the two instances cited was “mitigation” used in its legal sense to refer to possible actions incorporated into one or more of the alternatives to reduce the burden of the action on some group. NMFS will revise the text in the final EIS to substitute language less likely to create confusion. In Section 10.4.3.6.1, pages 10-87 and 10-88, NMFS will replace references to “mitigation” in reference to CDQ communities with references to “minimization.” The comment is in error in asserting that the DEIS only looks at two narrowly defined mitigation measures. The DEIS is fundamentally concerned with alternatives to mitigate the impacts of the interim final rule. Alternative 1, the status quo, includes all the Steller sea lion protection measures that became effective in the interim final rule in the Aleutian Island Areas 541, 542, and 543 in January 2011. The remaining alternatives, Alternatives 2 through 4, and the Council’s recommended preferred alternative, Alternative 5, include measures meant to mitigate adverse impacts of Alternative 1 on fishermen, communities, and fishing businesses. Many elements of these alternatives were developed by the Council’s Steller Sea Lion Advisory Committee in several meetings during 2012. Alternative 4 reverts management (with certain exceptions) to the measures in effect in 2010, the year before the interim final rule became effective. Chapters 8, 9, and 10 evaluate the impacts of these four mitigating action alternatives on a wide range of directly and indirectly regulated fleets, and different communities. Other chapters in the DEIS evaluate the impacts of these mitigating action alternatives on the different components of the natural environment.

Chapter 11 Comments

These comments are on Chapter 11, research needs and prioritization. The comments received on Chapter 11 were primarily on the types of research that need to be conducted to further understand the potential effects of fisheries on Steller sea lions and groundfish surveys.

CH11-1 Comment: The EIS should address the prioritization of resources for fish biomass surveys in the Aleutian Islands to heighten the importance of Atka mackerel and Pacific cod in survey design.

Response: Section 11.1.1 of the DEIS discusses groundfish surveys used to inform management of the fisheries and identifies additional surveys that would inform the status of groundfish in the Aleutian Islands in the winter, an energy important time for Steller sea lions. Complementary information about the biomass and distribution of Atka mackerel and Pacific cod is being gathered through tagging studies described in Chapter 11. Atka mackerel poses a particular problem for surveys using trawl gear because of spatially patchy distribution and the unknown distribution of biomass in areas that cannot be sampled with a trawl. The issue of estimating groundfish biomass in untrawlable habitat is one that NMFS is addressing nationwide through a group called the Strategic Initiative on Sampling in Untrawlable Habitat. While the echo-integrated trawl surveys target pollock, the Aleutian Islands biennial bottom trawl survey prioritizes important commercial species like Atka mackerel and Pacific cod in the survey design. Consistent with recent Resource Assessment and Conservation Engineering Division assessment surveys, sampling effort for each stratum was determined using a modified Neyman optimum allocation sampling strategy, which considers relative abundances of commercially important groundfish species from the previous five surveys of the area and the current ex-vessel value of each species. The Aleutian Islands bottom trawl survey completes approximately 420 stations by the two contracted fishing vessels over a 72-day period. Improving survey estimates for Pacific cod and Atka mackerel would require adding an additional vessel during the limited sampling window to substantially add sampling stations or possibly conducting additional and alternate stations for targeted species in a synthetic sampling design that builds upon the long-term bottom trawl survey. Changes to survey design to optimize estimation of biomass for a single species would jeopardize its utility as a long-term multispecies survey. Additional data collection beyond the scope of the existing Aleutian Islands survey would require significant increases in Alaska Fisheries Science Center funding and staffing. This information on prioritization will be added to Section 11.1.1 of the final EIS. This additional information will provide a better understanding of the limitations in conducting trawl surveys.

CH11-2 Comment: The EIS should include a discussion of needed research on Atka mackerel movement and possible permitting barriers. The EIS should include a discussion on the difficulty in obtaining permits in order to conduct fish movement studies inside Steller sea lion critical habitat and what effect this regulatory impediment is having on fisheries research. The discussion should include avenues to facilitate and expedite the permitting process for research necessary to explore fish movement and the potential, or lack thereof, for localized depletion.

Response: Sections 3.2.5 and 11.1.1.3 of the DEIS include discussions of research on Atka mackerel movement. Section 5.2.4 includes an analysis of the potential impact of this research on Steller sea lions and other marine mammals to facilitate consultation that may be needed to support the issuance of a scientific research permit for the study. The Fisheries Interaction Team of the Alaska Fisheries Science Center in collaboration with the North Pacific Fisheries Foundation (NPFF) is scheduled to conduct a Steller sea lion prey study and Atka mackerel tagging study focusing on the Western Aleutian Island subarea in 2014-2015. The study will include one Atka mackerel tag release cruise in May/June of 2014 and two Atka mackerel recovery cruises in September 2014 and March 2015. Funding for this study was provided by North Pacific Research Board, NPFF, and NMFS. Section 11.1.1.3 will be revised in the final EIS to include this information.

CH11-3 Comment: Given the lack of data and information on which to assess population-level effects of increased fish harvests in and around the western and central Aleutian Islands, NMFS should closely monitor for evidence of the effects such harvests may have on Steller sea lion foraging success, vital rates at the population, statistical area, and rookery levels, and progress towards overall recovery.

Response: NMFS agrees that monitoring the potential effects of the fisheries on Steller sea lions is important to understand the potential for recovery. Research on fisheries effects on Steller sea lions is described in Chapter 11 and in Section 3.2.5.

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